Ontario

Ontario Geological Survey
Open File Report 6097

Results of the "Spider 3" Regional Kimberlite Indicator Mineral and Geochemistry Survey Carried Out in the Vicinity of the Upper Attawapiskat and Ekwan Rivers, Northern Ontario

2003

Ontario

ONTARIO GEOLOGICAL SURVEY

Open File Report 6097

Results of the “Spider 3” Regional Kimberlite Indicator Mineral and Geochemistry Survey Carried Out in the Vicinity of the Upper Attawapiskat and Ekwan Rivers, Northern Ontario

by

D.C. Crabtree and C.F. Gleeson

2003

Parts of this publication may be quoted if credit is given. It is recommended that reference to this publication be made in the following form:

Crabtree, D.C. and Gleeson, C.F. 2003. Results of the “Spider 3” regional kimberlite indicator mineral and geochemistry survey carried out in the vicinity of the upper Attawapiskat and Ekwan rivers, northern Ontario; Ontario Geological Survey, Open File Report 6097, 127p.

© Queen’s Printer for Ontario, 2003

© Queen's Printer for Ontario, 2003.

Open File Reports of the Ontario Geological Survey are available for viewing at the Mines Library in Sudbury, at the Mines and Minerals Information Centre in Toronto, and at the regional Mines and Minerals office whose district includes the area covered by the report (see below).

Copies can be purchased at Publication Sales and the office whose district includes the area covered by the report. Although a particular report may not be in stock at locations other than the Publication Sales office in Sudbury, they can generally be obtained within 3 working days. All telephone, fax, mail and e-mail orders should be directed to the Publication Sales office in Sudbury. Use of VISA or MasterCard ensures the fastest possible service. Cheques or money orders should be made payable to the *Minister of Finance.*

Mines and Minerals Information Centre (MMIC) Macdonald Block, Room M2-17 900 Bay St. Toronto, Ontario M7A 1C3	Tel:	(416) 314-3800 1-800-665-4480(toll free inside Ontario)
Mines Library 933 Ramsey Lake Road, Level A3 Sudbury, Ontario P3E 6B5	Tel:	(705) 670-5615
Publication Sales 933 Ramsey Lake Rd., Level A3 Sudbury, Ontario P3E 6B5	Tel: Fax: E-mail:	(705) 670-5691(local) 1-888-415-9845(toll-free) (705) 670-5770 pubsales@ndm.gov.on.ca

Regional Mines and Minerals Offices:

Kenora - Suite 104, 810 Robertson St., Kenora P9N 4J2

Kirkland Lake - 10 Government Rd. E., Kirkland Lake P2N 1A8

Red Lake - Box 324, Ontario Government Building, Red Lake P0V 2M0

Sault Ste. Marie - 70 Foster Dr., Ste. 200, Sault Ste. Marie P6A 6V8

Southern Ontario - P.O. Bag Service 43, Old Troy Rd., Tweed K0K 3J0

Sudbury - Level B3, 933 Ramsey Lake Rd., Sudbury P3E 6B5

Thunder Bay - Suite B002, 435 James St. S., Thunder Bay P7E 6S7

Timmins - Ontario Government Complex, P.O. Bag 3060, Hwy. 101 East, South Porcupine P0N 1H0

Toronto - MMIC, Macdonald Block, Room M2-17, 900 Bay St., Toronto M7A 1C3

This report has not received a technical edit. Discrepancies may occur for which the Ontario Ministry of Northern Development and Mines does not assume any liability. Source references are included in the report and users are urged to verify critical information. Recommendations and statements of opinions expressed are those of the author or authors and are not to be construed as statements of government policy.

If you wish to reproduce any of the text, tables or illustrations in this report, please write for permission to the Team Leader, Publication Services, Ministry of Northern Development and Mines, 933 Ramsey Lake Road, Level B4, Sudbury, Ontario P3E 6B5.

Cette publication est disponible en anglais seulement.

Parts of this report may be quoted if credit is given. It is recommended that reference be made in the following form:

Crabtree, D.C. and Gleeson, C.F. 2003. Results of the "Spider 3" regional kimberlite indicator mineral and geochemistry survey carried out in the vicinity of the upper Attawapiskat and Ekwan rivers, northern Ontario; Ontario Geological Survey, Open File Report 6097, 127p.

Contents

Abstract ix

Introduction 1

Location and Area Sampled 2

Physiography 2

Geology of the Survey Area 2
- Quaternary Geology 2
  - Important Field Observations Relating to Quaternary Geology 4
- Bedrock Geology 4
  - Important Field Observations Relating to Bedrock Geology 6
- Structural Geology 6
- Economic Geology 7
- Location of Known Kimberlites and Other Ultramafic Diatremes in the Spider 3 Survey Area 7

Methodology 9

Logistics 10

Laboratory Procedures 10
- Heavy Mineral Processing 10
- Geochemistry 12

Results and Discussion 13
- Kimberlite Indicator Minerals 13
  - Garnet 14
  - Magnesium-rich Ilmenite 17
  - Chrome Diopside 19
  - Chromite and Olivine 19
  - Areas of Interest 19
- Geochemistry 22
  - Areas of Interest 24
  - Provenance 26
  - Base Metals 27
  - Gold 28
  - Rare Earth Elements, Thorium and Uranium 28
  - Strontium and Phosphorus 29
  - Future Evaluation of the Platinum Group Element Potential of the Area 29

Summary and Recommendations 29

References 31

Appendix A Sample Locations by UTM and Geographic Coordinates ... 33
Appendix B Sample Preparation Results for Gravity Table and Heavy Liquid Concentration by Consorminex Inc. ... 43
Appendix C Mineralogy Report by Consorminex Inc. ... 57
Appendix D Mineral Chemistry for KIM Grains: Garnet, Mg-Ilmenite, Cr-Diopside and Chromite ... MRD 109
Appendix E Geochemistry Results ... MRD 109
Appendix F Proportional Dot Maps for Geochemistry Results from the –80 Mesh Bulk Samples and –60 Mesh Non-Magnetic Tabled Concentrates ... 71

Metric Conversion Table ... 127

FIGURES

1. Location of the Spider 3 study area ... 1
2. Regional distribution of sample sites in the Spider 3 survey area. ... back pocket
3a. Generalized Quaternary geology of the Spider 3 survey area. ... 3
3b. Ice flow indicators derived from linear ice flow features in the Spider 3 survey area. ... back pocket
4a. Generalized bedrock geology of the Spider 3 survey area. ... 5
4b. Additional important geological observations and interpretations carried out during the 1996 field sampling program. ... back pocket
5. Location of known kimberlites and ultramafic diatremes in the vicinity of the Spider 3 survey area ... 8
6. Heavy mineral sample processing flow chart used by Consorminex Inc. ... 11
7. CaO vs. Cr_2O_3 plot for Cr-pyrope garnets recovered from the Spider 3 survey area. ... 15
8. Regional distribution of Cr-pyrope garnets recovered from the Spider 3 survey area. ... 16
9. MgO vs. Cr_2O_3 plot for Mg-ilmenites recovered from the Spider 3 survey area. ... 17
10. Regional distribution of Mg-ilmenites recovered from the Spider 3 survey area. ... 18
11. Al–Na–Cr (atomic) ternary diagram for clinopyroxenes recovered from the Spider 3 survey area ... 20
12. Ca/(Ca+Mg) vs. Na_2O plot for clinopyroxenes recovered from the Spider 3 survey area. ... 20
13. a) MgO vs. Cr_2O_3 plot for chromites recovered from the Spider 3 survey area.
b) TiO_2 vs. Cr_2O_3 plot for chromites recovered from the Spider 3 survey area. ... 21
14 Regional distribution of total KIMs recovered from the Spider 3 survey area ... 23
15. Location of geochemically anomalous areas based on the results from both –80 mesh bulk sample and –60 mesh non-magnetic tabled concentrate data. ... 25

TABLES

1. Summary table of geochemically anomalous areas ... 26

DATA

Miscellaneous Release—Data 109 Description of separate release of MRD 109 ... ix

Miscellaneous Release—Data 109

Indicator Mineral and Geochemistry Data Release, Spider 3 Regional Survey, Upper Attawapiskat and Ekwan Rivers, Northern Ontario; by D.C. Crabtree and C.F. Gleeson.

This release consists of data related to kimberlite indicator mineral (KIM) and geochemistry results for 626 samples of alluvium, till and glaciofluvial material collected during the "Spider 3" regional survey carried out in the vicinity of the upper Attawapiskat and Ekwan rivers, northern Ontario. These data are being released in conjunction with Open File Report 6097. Files on this release contain information on sample site locations; results for gravity table and heavy liquid concentration; mineral processing results and KIM counts; microprobe data for KIMs (e.g., Cr-pyrope garnets, Mg-ilmenites, clinopyroxenes and chromites); and geochemistry results. The data are available as self-extracting zip files in ASCII (*.txt*) and Microsoft® Excel (*.xls*) file format on one 3.5-inch MS-DOS® diskette.

Abstract

In 1996, KWG Resources Inc. carried out a helicopter-supported heavy mineral–geochemical survey of a 13 000 km^2 region of northern Ontario located approximately between latitudes 52°N and 54°N and longitudes 85°W and 87°W. This survey, which was named "Spider 3", covered the upper reaches of the Winiskisis Channel and the Ekwan, Muketei and Attawapiskat rivers. A total of 626 samples of modern alluvium, till and glaciofluvial materials were collected as part of this survey. The resulting data were purchased by the Ontario Geological Survey (OGS) as part of the Operation Treasure Hunt (OTH) initiative. The results presented herein are intended to augment both past and future projects that might be carried out in the region.

The results show that the numbers of kimberlite indicator minerals (KIMs) found in the survey area are generally low when compared to examples from other survey areas. However, a number of locations of interest are highlighted in the report. The area of greatest exploration potential is located on the western tributaries of the Ekwan River system in a region characterized by complex faulting. It is suggested that the information provided here be used in conjunction with newly available geophysical data to properly evaluate the region in follow-up investigations.

The geochemistry results indicate that the prospect for base metal and gold mineralization may be promising and requires further investigation. Other important results that are highlighted include rare earth element, thorium and uranium (REE, Th, U) anomalies as well as an unusual, yet interesting, strontium and phosphorus (Sr, P) anomaly in the southwest part of the survey area. This anomaly is well represented in tills and modern alluvium and, because of co-existing multi-element anomalies (Sc, Au, Ni and Cu for example), the area warrants a follow-up investigation. In addition to these areas, an intense chromium (Cr) anomaly occurs between the upper reaches of the Muketei River tributaries and Attawapiskat River in the vicinity of Fishtrap Lake. It is suggested here that this anomaly may be related to the large mafic complex present in this area and it is recommended that this location be further investigated to evaluate the potential of the area to host platinum group elements (PGE).

Digital electron microprobe and geochemistry data are available separately as Miscellaneous Release—Data (MRD) 109.

Results of the “Spider 3” Regional Kimberlite Indicator Mineral and Geochemistry Survey Carried Out in the Vicinity of the Upper Attawapiskat and Ekwan Rivers, Northern Ontario

D.C. Crabtree and C.F. Gleeson
Ontario Geological Survey
Open File Report 6097
2003

103-03531/

Introduction

In the summer of 1996, a regional helicopter-supported heavy mineral–geochemical survey was carried out by KWG Resources Inc. over a 13 000 km^2 region of northern Ontario (Figure 1) that covers the upper reaches of the Winiskisis Channel, Ekwan and Attawapiskat rivers. A total of 626 samples of modern alluvium, till and glaciofluvial materials were collected from these drainage systems and their tributaries. The locations of the individual sample sites are presented in Figure 2 (back pocket). This survey was one component of a larger program carried out during the 1990s by KWG Resources Inc. that utilized heavy mineral/geochemical sampling combined with airborne geophysical surveys with the primary goal being the delineation of areas favourable for kimberlite exploration.

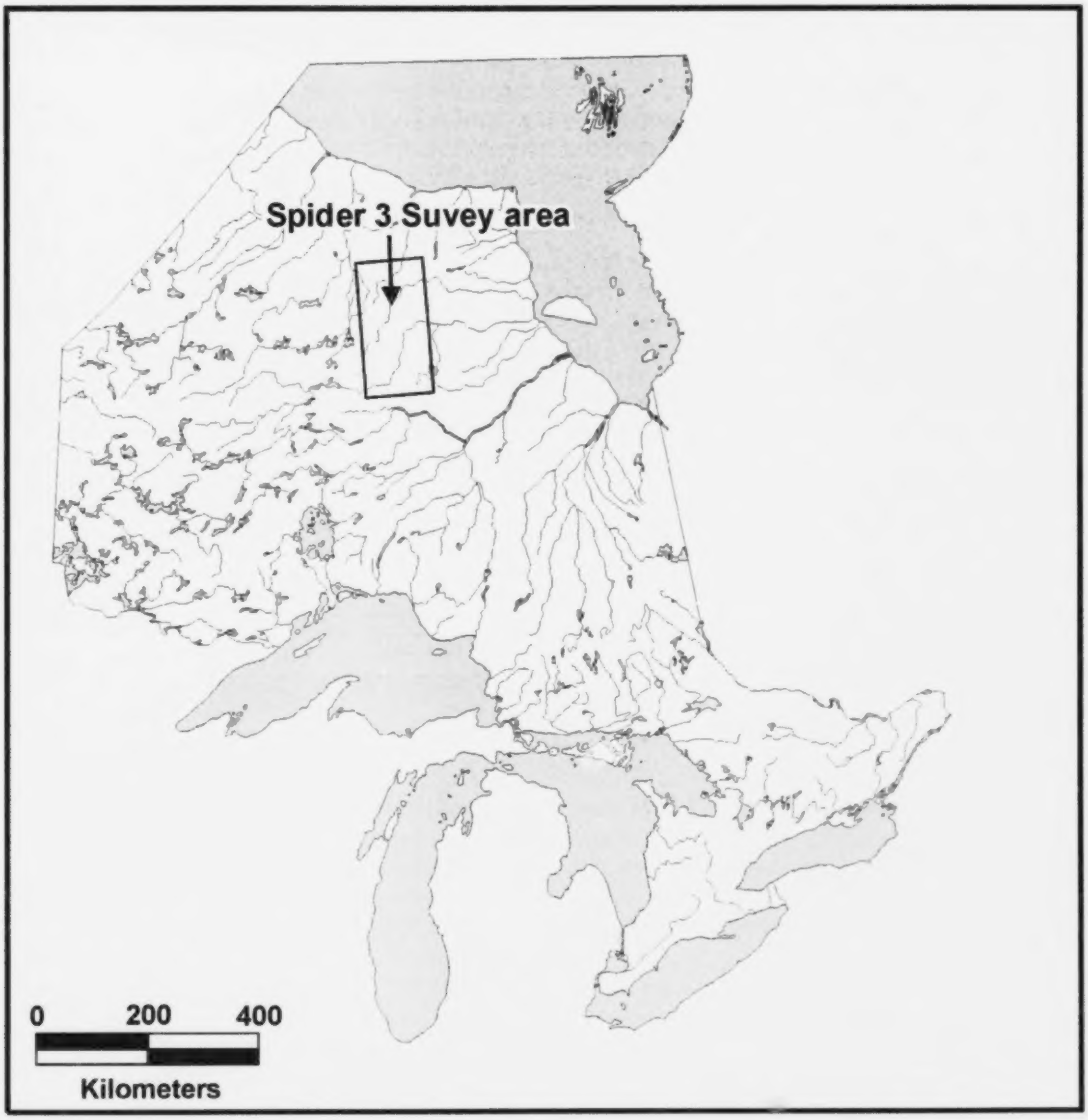


Figure 1. Location of the Spider 3 study area.

One of the major goals of Ontario's Operation Treasure Hunt (OTH) program was to procure relevant exploration-related data from the private sector. The publication of the Spider 3 survey is intended to provide the public with new information that will augment both past and future projects carried out by both the Ontario Geological Survey and the private sector. This report represents the results derived from both heavy mineral data and multi-element geochemical analyses of modern alluvium, tills and glaciofluvial sediments.

Location and Area Sampled

The area selected for sampling lies roughly between latitudes 52°00'N and 54°00'N and longitudes 85°00'W and 87°00'W. Sample site locations are distributed through the following 1:50 000 National Topographic System (NTS) map sheets: 43C/13, 43D/1, 43D/7, 43D/8, 43D/9, 43D/10, 43D/15, 43D/16, 43E/1, 43E/2, 43E/7, 43E/8, 43E/9, 43E/10, 43E/15, 43E/16, 43F/2, 43F/3, 43F/4, 43F/5 and 43L/2.

Physiography

The survey area falls mainly within the Hudson Bay Lowland physiographic region as defined by H.S. Bostock (1970) and is best described as an area of low relief with extensive organic deposits and subdued glacial features. Outcrop in the region is at best sparse although more prevalent in the southwest portion of the survey area where Paleozoic rocks of the Hudson Bay Lowland gradually give way to Archean rocks of the Severn Uplands.

There are 3 major drainage systems present in the survey area. These include the Attawapiskat, Ekwan and Winisk basins. The Attawapiskat basin has many tributaries, including the Muketei River and drains most of the southern part of the survey area which then flows east into James Bay. The Ekwan basin, which drains much of the north-central part of the survey area, also flows east toward James Bay. The Winisk basin drains the northwestern part of the survey area through a number of major tributaries that include the Shamattawa River and Winiskisis Channel. The Winisk basin drains north into Hudson Bay.

Geology of the Survey Area

QUATERNARY GEOLOGY

Surficial mapping in the Spider 3 study area is very limited with regional scale mapping (1:506 880) only available for the southwest portion between latitudes 52°00'N and 53°00'N and longitudes 86°00'W and 87°00'W (Prest 1963). Most of this area is mapped by Prest (1963) under broad geomorphic descriptions as either bogland or ground moraine. Other noteworthy features such as eskers, the probable westerly limit of the Tyrell sea incursion and the general southern fabric of linear ice flow features that resulted from the last ice advance through the area are also highlighted. A generalized Quaternary geology map for the entire study area is presented in Figure 3a. This figure has been derived from the 1:1 000 000 coverage presented on the Geology of Ontario Map 2553 (Barnett et al. 1991). The majority of the survey area is dominated by organic deposits with till plains occurring in the southwest and to a lesser degree in the northeast.

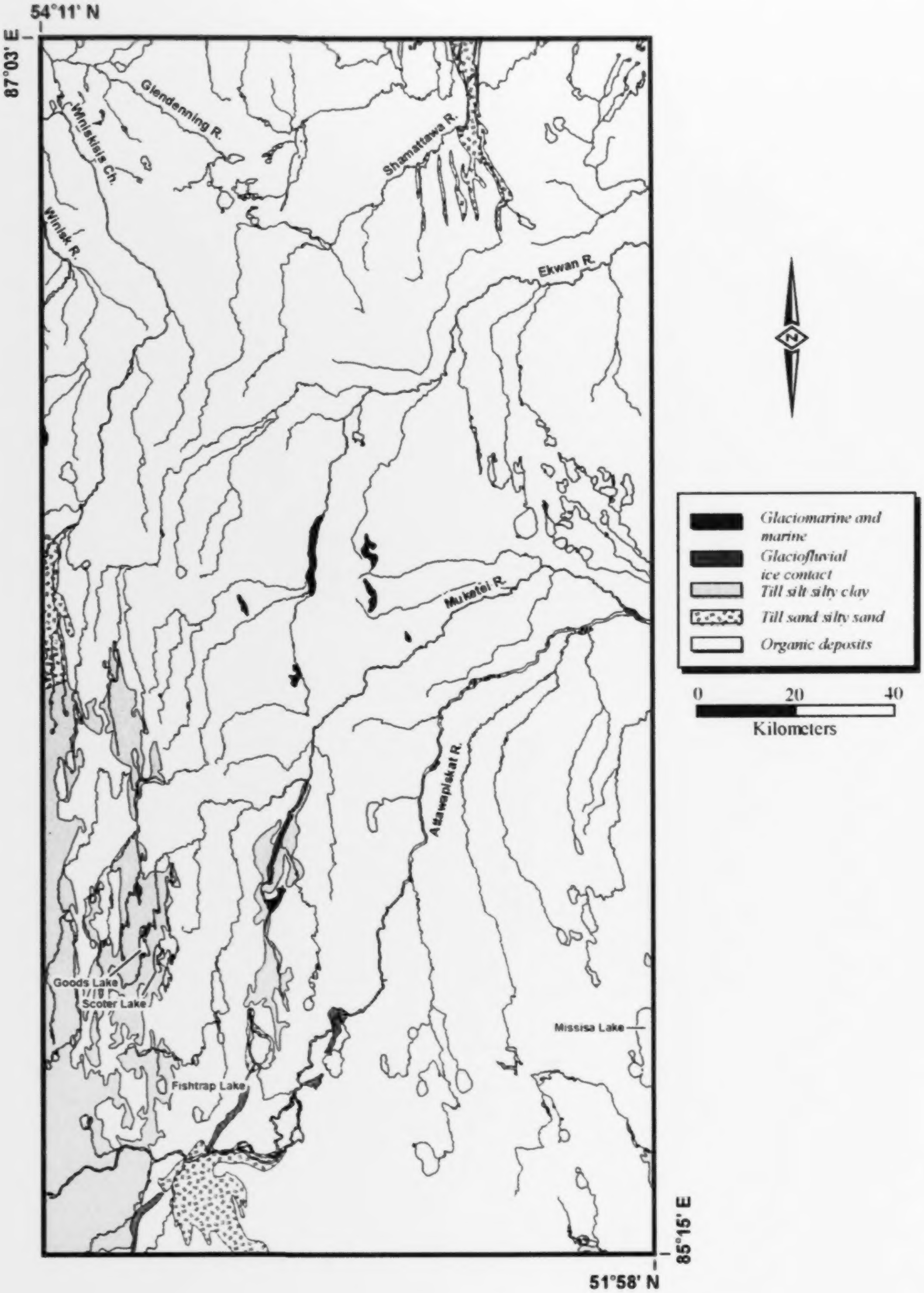

54°11' N
87°03' E
Glendenning R.
Winisk R.
Winiskisis Ch.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Goods Lake
Scoter Lake
Fishtrap Lake
Missisa Lake
N
Glaciomarine and marine
Glaciofluvial ice contact
Till silt silty clay
Till sand silty sand
Organic deposits
0
20
40
Kilometers
85°15' E
51°58' N

Figure 3a. Generalized Quaternary geology of the Spider 3 survey area.

A compilation of glacial striae measurements obtained during the sampling program is presented in Figure 3b (back pocket). Some of the measurements presented here show that the earliest ice flow may have been from southeast to northwest. This is shown by the sequence of striations observed in the vicinity of samples 96R050, 96R107 and 96R129. It is also supported by regional work carried out in the northwest part of the province (Thorliefson et al. 1992) as well as previous work by H.H. Bostock (1962), Prest (1963) and Thurston et al. (1979). Later advance of the Laurentide ice had a south-southwest flow. This is well illustrated on the map for the Red Lake–Lansdowne House area (Prest 1963). The most recent ice flow indicators can be correlated to a late readvance (Cochrane) from the north, which accounts for many of the north-south striae shown on Figure 3b (back pocket).

Important Field Observations Relating to Quaternary Geology

Field observations demonstrated that till exposures are not plentiful. Where observed, they have been sampled. Most till deposits have been found in areas of relatively thin overburden in the central western sector and at the headwaters of the Ekwan River in the southwestern part of the project area. Some of these have been mapped by Prest (1963) and Thurston et al (1979) as drumlinoid ridges. Till exposures may also be found along the major rivers. A prominent till exposure has been reported by Prest (1963) on the Attawapiskat River (52°35′N, 86°02′W) where 4 to 5 m of till overlies pre-Wisconsinan stratified sediments. It is possible that tills from earlier glaciations may be present in deep valleys in the area.

A persistent sandy esker ridge up to 30 m high extends from the south branch of the Ekwan River southward paralleling the Muketei River, continuing south past Fishtrap Lake and across the Attawapiskat River to latitude 51°00′N (Prest 1963). Also, another smaller esker system extends south and south-southwest for about 25 km along the Attawapiskat River from 52°30′N and 86°10′W.

The northern part of the study area is covered by a moderately thick blanket of marine clays. The clays are thickest in the northern part of the area and become thinner toward the south and west. They are not present in the southern part of the area. Thick peat and organic deposits overlie most of the glacial and marine deposits such that these materials cannot be sampled by surface techniques. Discontinuous permafrost is present throughout the area and, in some places, frozen ground is indicated by 3 m high hills generally covered by dense black spruce vegetation. Features sometimes referred to as "drunken forests" are commonly present along the margins of these permafrost hills. Probing of the bogs adjacent to these hills indicates that the unfrozen organic deposits are at least 3 to 4 m thick.

BEDROCK GEOLOGY

Regional geological mapping of the area has been completed at scales of 1:253 440 (Bostock 1962) and 1:506 880 (Duffell et al. 1963) by the GSC and at a scale of 1:253 440 by the OGS (Thurston et al. 1979). The combined coverage of these sources is limited to the westerly part of the study area between latitudes 52°00′N and 54°00′N and longitudes 86°00′W and 87°00′W. The geology is poorly understood because of the scarcity of outcrop caused by extensive overburden cover. Much of the geological interpretation has been extrapolated using aeromagnetic maps. Figure 4a is a generalized bedrock geology map of the survey area derived from the 1:1 000 000 scale Geology of Ontario Map 2541 (Ontario Geological Survey 1991).

For the most part, the surveyed area is underlain by Precambrian intrusive and extrusive rocks of the Sachigo Subprovince with a minor portion of the Berens River Subprovince intersecting the southernmost part of the study area. The bedrock geology has been described as a granitic terrain in which belts and isolated areas of metamorphosed volcanic and sedimentary rocks are preserved. Several of those greenstone belts, made up of mainly mafic volcanic rocks, occur within the survey area. The most northerly belt trends west-northwest in the northwest sector and is interpreted from the aeromagnetic maps to strike across the Winisk River and Winiskisis Channel.

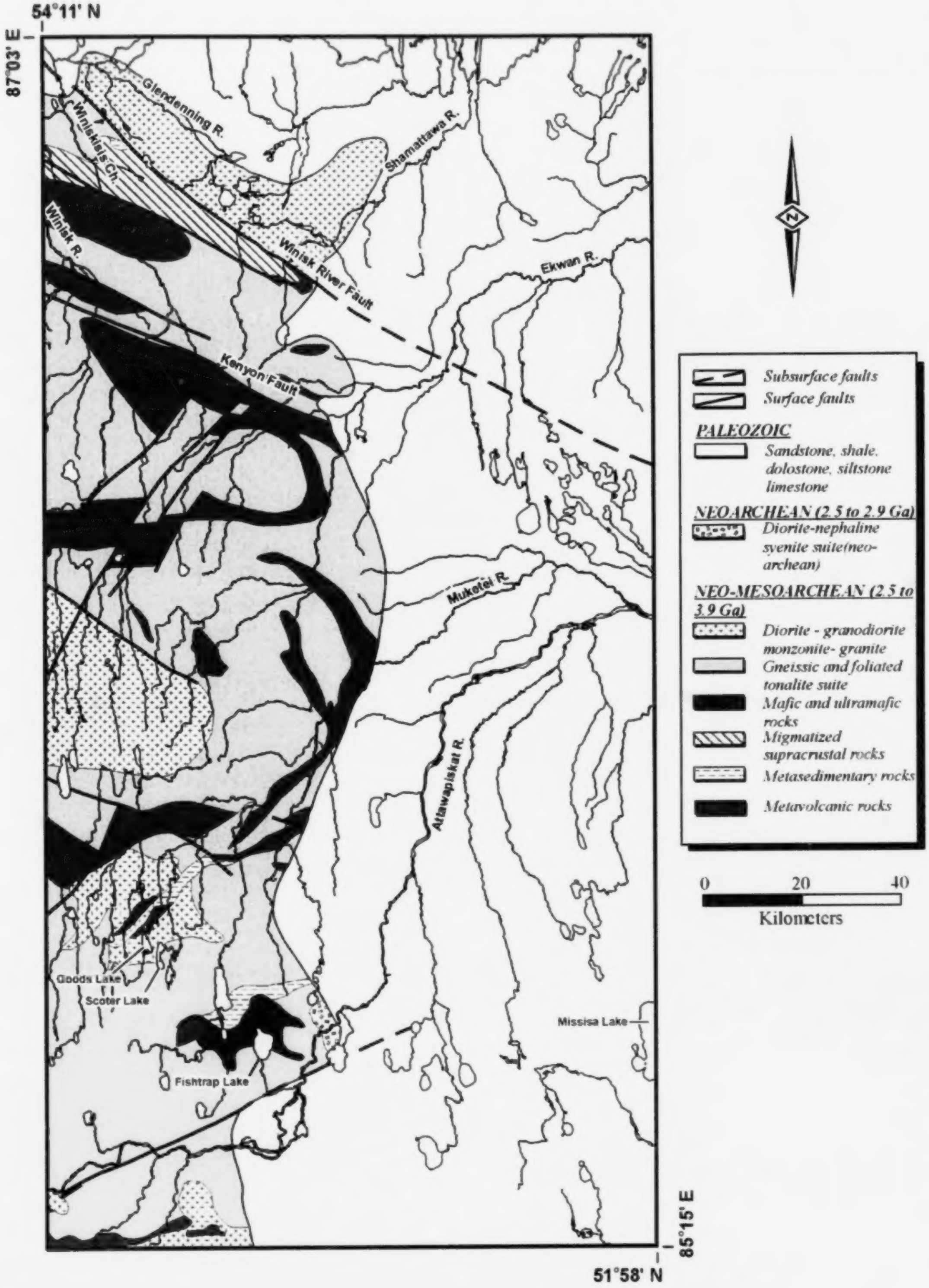

54°11' N
87°03' E
Glendenning R.
Winiskisis Ch.
Shamattawa R.
Winisk R.
Winisk River Fault
Ekwan R.
Kenyon Fault
Muketei R.
Attawapiskat R.
Goods Lake
Scoter Lake
Fishtrap Lake
Missisa Lake
85°15' E
51°58' N
N
Subsurface faults
Surface faults
PALEOZOIC
Sandstone, shale, dolostone, siltstone limestone
NEOARCHEAN (2.5 to 2.9 Ga)
Diorite-nephaline syenite suite(neo-archean)
NEO-MESOARCHEAN (2.5 to 3.9 Ga)
Diorite - granodiorite monzonite- granite
Gneissic and foliated tonalite suite
Mafic and ultramafic rocks
Migmatized supracrustal rocks
Metasedimentary rocks
Metavolcanic rocks
0
20
40
Kilometers

Figure 4a. Generalized bedrock geology of the Spider 3 survey area.

South of the belt, outcrops of gabbroic rocks have been mapped by Thurston et al. (1979) on the Winisk River and to the southeast in the Winiskisis Channel. A belt of mafic to intermediate volcanic rocks are associated with this gabbroic complex. The belt is interpreted to trend southeast to the Ekwan River, where it forms an arc and swings westward to cross the Winiskisis Channel where several outcrops have been mapped. Mafic intrusive rocks have also been mapped and interpreted along the east sector of the area where they underlie the upper reaches of the Ekwan and Muketei rivers. At the headwaters of the Ekwan and Muketei rivers, Bostock (1962), Duffell et al. (1963) and Thurston et al. (1979) have mapped and interpreted the presence of mafic to intermediate volcanic rocks with minor felsic volcanic rocks within the mafic intrusive units. They also show a southwest-trending band of intercalated sedimentary (quartzite, arkose, greywacke) and intermediate to mafic volcanic rocks enclosed by the mafic intrusive rocks extending from the Muketei River headwaters southwest to Goods Lake (52°32′N, 86°45′W).

In the south sector of the area on the Attawapiskat River and west of it, in the vicinity of Fishtrap Lake (52°21′N, 86°24′W), there is another gabbroic-volcanic complex. These units have a high magnetic relief and, in places, are interpreted by Duffell et al. (1963) to contain iron formation. A regional north-northeast-trending mafic dike cuts the rocks of this area. The northern extent of this dike would underlie the west part of Fishtrap Lake and continue to the head of the Muketei River (Bostock 1962).

Most of the region is underlain by granitic rocks that can be grouped into foliated granitic rocks, which are thought to have been derived from granitization of volcanic and sedimentary rocks, porphyritic granitoids and leucocratic massive granites. The gneissic granites and migmatites are prevalent in the northern part of the area, north of the Kenyon Fault. The more massive and leucrocratic units occupy the central parts of the area while the south sector between the Attawapiskat River and Prime Lake contains massive granitic intrusive rocks with foliated granitic and migmatitic rocks in the surrounding areas.

Paleozoic rocks border the east sector of the area. They are made up for the most part of Ordovician and Silurian limestones, dolostones, sandstones, siltstones and shales (Ontario Geological Survey 1991).

Important Field Observations Relating to Bedrock Geology

Figure 4b (back pocket) contains additional important information collected in the field that may prove valuable to the reader. This information includes observations on foliation, location of dikes/veins, evidence of hydrothermal activity, location of outcrops and general geological interpretation of the area.

STRUCTURAL GEOLOGY

Major northwest-trending faults (Winisk River and Kenyon faults) are present in the northern part of the area. Shearing and mylonitization along the Winisk River Fault has been described by Thurston et al. (1979; see section by Riley). In the north half of the surveyed area, a series of late northeast- and north-trending faults have been interpreted from the aeromagnetic data. Thurston et al. (1979) show these faults off-setting the greenstone belts east of the Winiskisis Channel (*see* Figure 3a). They also related the emplacement of the Beaver House (52°53′N, 89°55′W) and Schryburt Lake (52°36N, 89°37′W) carbonatite complexes, located west of the survey area, to northeast-trending faults. These carbonatites have been dated at 1100 Ma, an age similar to the Kyle Lake kimberlites.

ECONOMIC GEOLOGY

The only known metallic mineral occurrences in the survey area consist of magnetite and pyrite in volcanic and gabbroic rocks (Duffell et al. 1963) in the south sector near Fishtrap Lake and the Attawapiskat River.

Between 1970 and 1973, mineral exploration was carried out along the Winisk River fault by a number of companies in the search for nickel-bearing ultramafic rocks similar to those in the Thompson Nickel Belt. The programs met with little success. For the most part, the magnetic anomalies were attributed to pyroxene-bearing granitic rocks containing 1 to 2% magnetite. Many of the EM conductors that were drilled were attributed to conductive overburden.

More recently (1995 to 1997), Spider Resources Inc. carried out diamond exploration programs in the area. In 1995, they completed a high-resolution fixed-wing magnetic survey that covered the survey area (some 51 192 line kilometres) at a line spacing of 400 m. A total of 30 anomalies were staked as a result of this work. These data were also purchased as part of the OTH initiative and are slated for release to the public (OGS 2003).

In the winter of 1996, heli-magnetometer surveys were carried out at a 100 m line spacing to cover 48 anomalies. This work was followed up by ground magnetic surveys over 19 selected anomalies. To date, 3 diamond drill holes have been completed. Each of the holes intersected gneiss/magnetic gneiss and were subsequently abandoned.

LOCATION OF KNOWN KIMBERLITES AND OTHER ULTRAMAFIC DIATREMES IN THE SPIDER 3 SURVEY AREA

A total of 5 ultramafic diatremes have been identified in the Spider 3 study area by KWG Resources Inc. Sage (2000) described these intrusions as kimberlitic although there is limited petrographic information to confirm and/or support this classification. The diatremes are known by the names Kyle Lake 1 through 5, although their distribution is not localized to one particular region of the study area (Figure 5). Phlogopite from the Kyle Lake 1 diatreme returned a Rb/Sr isotopic age of 1100±40 Ma suggesting Mesoproterozoic emplacement during the development of the mid-continental rift in the Lake Superior region (Sage 2000). It is assumed that the ages of the other Kyle Lake diatremes are at least Proterozoic since all drill core logs describe a Paleozoic cover. The Kyle Lake 1 occurrence is especially important since significant numbers of both micro- and macro-diamonds were recovered from this location.

Approximately 85 km due east of the Spider 3 survey area, a total of 18 Jurassic-age kimberlites have been identified. Of the 18, 16 were discovered by Monopros during the 1980s and another 2 (MacFadyen 1 & 2) were discovered by the KWG Resources Inc./Spider Resources Inc. partnership during the 1990s. All of these kimberlites intrude the Paleozoic cover along what appears to be a north-northwest trend in the vicinity of the Attawapiskat River (*see* Figure 5). A detailed account of the discovery, including a discussion on down-ice indicator mineral dispersal patterns, is given in Kong et al. (1999). Sage (2000) provides detailed petrographic descriptions as well as extensive indicator mineral analyses from each of these occurrences. Uranium-lead (U/Pb) dating of perovskite grains from 3 of the Monopros kimberlites produced a very limited range of emplacement dates, which all fall between 175 and 180 Ma, suggesting that this entire group of kimberlites may represent a single early Jurassic intrusive episode.

Diamond recoveries from one of the kimberlites, the Victor kimberlite, have been encouraging and De Beers are currently evaluating this location for a potential mine site.

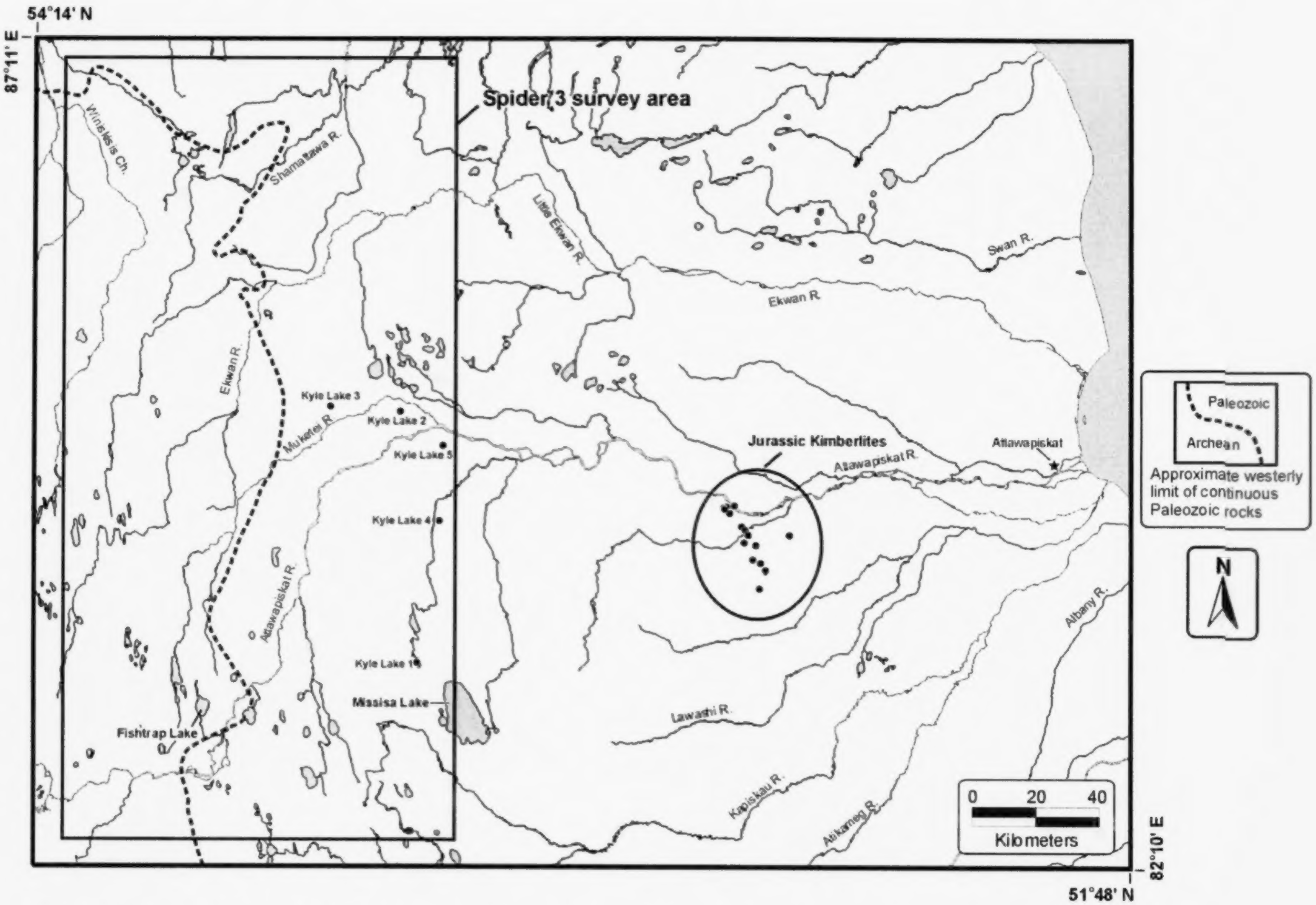

54°14' N
87°11' E
51°48' N
82°10' E
Spider 3 survey area
Winisk is Ch.
Shamattawa R.
Ekwan R.
Little Ekwan R.
Swan R.
Kyle Lake 3
Kyle Lake 2
Kyle Lake 5
Kyle Lake 4
Kyle Lake 1
Muketei R.
Attawapiskat R.
Fishtrap Lake
Missisa Lake
Jurassic Kimberlites
Attawapiskat
Lawashi R.
Kapiskau R.
Atikameg R.
Albany R.
0
20
40
Kilometers
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N

Figure 5. Location of known kimberlites and other ultramafic diatremes in the vicinity of the Spider 3 survey area. All of the Kyle Lake diatremes are thought to be Proterozoic in age.

Methodology

Initially, a program of drainage sediment sampling at 2 km intervals along all rivers and streams in the area was proposed. This plan was abandoned when it was found that suitable sampling materials could not be found at this spacing along the major rivers. The smaller streams (1st, 2nd and even 3rd order streams) had been extensively dammed by beavers and were often very wide areas of water with peat and organic-rich banks and bottoms. Therefore, the sampling methodology was changed to follow every river possible up to its source and obtain samples at a spacing of 2 km wherever suitable material existed. The major rivers are well incised (typically 1 to >10 m) and, as such, they have reworked much of the glacial materials overlying bedrock. In order to fill gaps in the sample coverage, till samples and esker gravels were also taken. In addition, gravels and sands were sampled from beaches surrounding modern lakes. It was felt that these deposits were derived by wave washing of till or glaciofluvial materials. A list of all sampled sites, together with geographic and UTM coordinates, are listed in Appendix A.

In the rivers, the preferred material for sampling was gravel. Where gravel was not present, sand would be sampled. In some cases, the only material present was organic sands. These materials were taken as a last resort because it was felt that most of the expense of obtaining samples had already been spent in getting to the site and that it was worth taking a sample in case it contained something of interest.

The area was covered starting from the northwest corner and progressing toward the east and south. Starting where each major river left the survey area, the river was followed to its source. When a suitable sampling spot was observed, a crew of 2 was let out of the helicopter to obtain the sample. The second crew continued up the stream and was dropped off at the next suitable sampling site. The helicopter then returned to pick up the first crew, following which the procedure was repeated. In most places, the sampling crew could be let out in the river or stream or on the banks. In some places, where the drainage channel was too narrow or trees overhung the stream, the sampling crew set from the nearest swamp from which they walked to get the sample. Only 2 of the selected sample sites could not be sampled because the stream was too narrow and because the nearest landing spot was at least 2 km distant.

At each site, the sampling crew examined the river bed to find suitable sample material. About 20 kg of the coarsest available sediment was collected by shovelling and passing the sample media through a 4 mesh (4.76 mm) sieve, which was fitted onto a 6 gallon plastic pail. As sediment was placed on the sieve, the sieve was agitated until the fines passed through. The coarse material was then discarded. For the final shovel of material, a 12 mesh (1.68 mm) screen was placed beneath the 4 mesh screen. Both screens were agitated until the fine material had passed through. The material collected on the 12 mesh screen was retained in a plastic bag for pebble lithology studies. The water was drained from the pail and the bulk sample was transferred to a pre-labelled, 24 by 36 inches "Dry Rite" bag. An aluminum tag, bearing the sample number, was placed in the bag and the bag was sealed using a "zap strap" to which a "Tyvek" tag bearing the sample number had been attached.

Initially, the samples were weighed as they were collected, however, the spring scales that were used quickly filled with sand and ceased to work. Subsequently, the quantity of sample was estimated by its volume. For those samples where field weight was measured, the weight was always greater than the weight received by the laboratory. This is because the field weight is of a saturated sample. By the time the samples reached the laboratory, they had been dewatered by vibration during transportation and had partially air dried.

In addition to the bulk and pebble lithology samples, a 250 g sample of fine material was collected for geochemical analyses in a pre-numbered Kraft soil sample bag. The fines were collected from beneath boulders in the streams where possible. Where such material did not exist, the best available material was sampled. Notes describing the sample and sample site were recorded on pre-printed forms. The sample site locations were plotted on 1:50 000 scale photo maps. The location was verified by the second crew as it flew past overhead. The location was transferred to an office set of 1:50 000 scale maps and the UTM locations were then determined from the map. The field notes were entered into a spreadsheet on a computer in camp.

If there was an outcrop at the sample site, its lithology was noted. Whenever the geology was of particular interest, the sampling crew would remain at the site to obtain additional information and, in some cases, would map the geology of specific outcrops (*see* Figure 4b; back pocket).

Upon completion of the drainage sediment sampling, the sample coverage was assessed to identify poorly sampled areas with respect to the known geophysical anomalies. In areas where samples were lacking, an attempt was made to collect till and glaciofluvial samples. Till samples were also collected at other locations, when the opportunity arose, during the course of the alluvial sampling program. Because till samples were collected from dry environments, they were not sieved. A 25 to 30 kg sample of material with the coarsest material removed by hand picking was collected. A geochemical sample of the same material was also collected at each of these sites. An additional 500 g sample of the bulk material was collected for pebble lithology studies.

Logistics

The sampling program was executed from the Spider Project base camp on Spider Lake (52°41′32″N, 84°46′35″W). The sampling and mapping program was completed in 45 days between August 1 and September 12, 1996. A total of 290 hours of helicopter time was used to complete the sampling and other necessary work using A-star 350-BA and a Bell 206L helicopters.

The bulk samples were left at the various fuel caches and at Spider Lake and were back-hauled on the aircraft used to supply fuel and other amenities to the survey area. A total of 3 shipments of samples were delivered to Consorminex Inc in Gatineau, Quebec, for heavy mineral processing. The geochemical samples were air dried in a tent at Spider Lake and were packed and shipped to Activation Laboratories Ltd. in Ancaster, Ontario. A total of 626 samples were collected in the field and shipped out for geochemical analysis and mineral processing. Of these samples, 510 were modern alluvium, 82 were till and 34 were glaciofluvial samples.

Laboratory Procedures

HEAVY MINERAL PROCESSING

The large 20 to 30 kg samples were submitted to Consorminex Inc. for heavy mineral processing. A flow chart illustrating the technique employed by Corsorminex is shown in Figure 6. The indicator mineral picking was carried out on a 10 to 11 g split of the >3.2 S.G. non-magnetic 0.25 to 1.7 mm heavy mineral fraction. The picked grains were divided into 2 categories. The most prospective kimberlite indicator minerals (KIM) were placed into group "A" vials for further analysis by electron microprobe. These grains were selected on the basis of distinctive appearance such as purple and lilac coloured chromium-pyrope (Cr-pyrope) garnets, emerald green chrome diopside (Cr-diopside) and black sub-vitreous ilmenite grains displaying conchoidal fracture. Other minerals of interest were placed into group "B" vials. These included other garnets (likely of crustal provenance), pale green Cr-diopsides and less distinctive ilmenites. This ilmenite category probably contained many other oxide minerals, such as rutile, Ti-hematite and spinels.

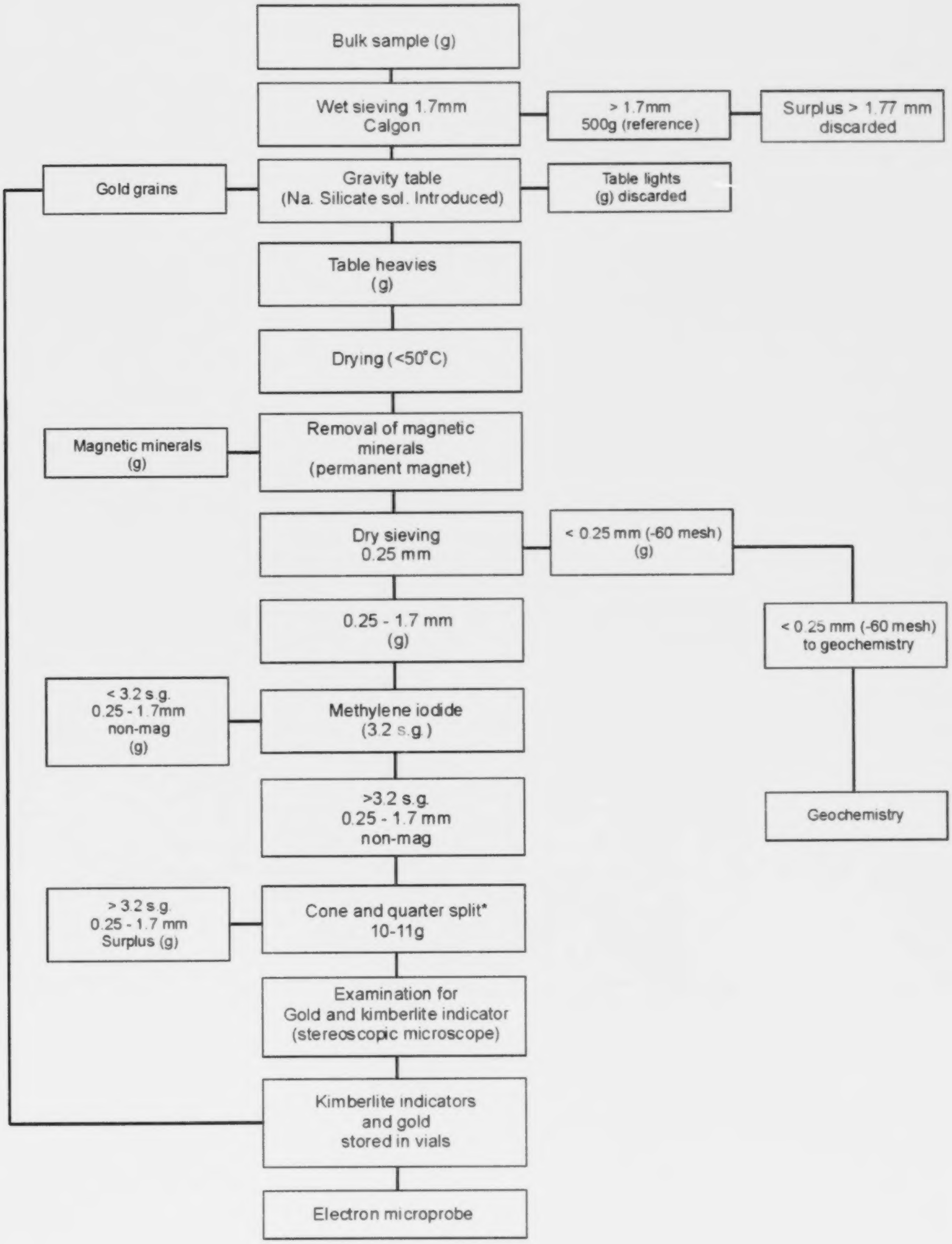

Bulk sample (g)
Wet sieving 1.7mm Calgon
> 1.7mm 500g (reference)
Surplus > 1.77 mm discarded
Gold grains
Gravity table (Na. Silicate sol. Introduced)
Table lights (g) discarded
Table heavies (g)
Drying (<50°C)
Magnetic minerals (g)
Removal of magnetic minerals (permanent magnet)
Dry sieving 0.25 mm
< 0.25 mm (-60 mesh) (g)
0.25 - 1.7 mm (g)
< 0.25 mm (-60 mesh) to geochemistry
< 3.2 s.g. 0.25 - 1.7mm non-mag (g)
Methylene iodide (3.2 s.g.)
>3.2 s.g. 0.25 - 1.7 mm non-mag
Geochemistry
> 3.2 s.g. 0.25 - 1.7 mm Surplus (g)
Cone and quarter split* 10-11g
Examination for Gold and kimberlite indicator (stereoscopic microscope)
Kimberlite indicators and gold stored in vials
Electron microprobe

Figure 6. Heavy mineral sample processing flow chart used by Consorminex Inc.

It should be emphasized here that the heavy mineral processing for all other OGS KIM surveys has been carried out by a different contractor (Overburden Drilling Management Ltd.). There are some notable differences in the procedure used by the 2 companies, particularly in the stage at which the magnetic fraction is removed and also in the use of the Franz™ isodynamic separator by Overburden Drilling Management to further isolate minerals based on paramagnetic susceptibilities after the use of heavy liquids.

Indicator minerals obtained from the Spider survey were received by the OGS in the form of 2 polished 1 inch epoxy plugs. In order to maintain consistency with previous KIM projects all of the grains were re-probed using the Cameca SX-50 at the Geoscience Laboratories in Sudbury. This system is fully automated and equipped with 4 wavelength dispersive (WD) spectrometers and auto-focus capabilities. Operating conditions and counting times are maximized to enable reasonable limits of detection and quantification, thereby producing statistically meaningful data when used with the traditional set of discrimination techniques presented as part of this study.

GEOCHEMISTRY

The 250 g field samples were submitted to Activation Laboratories Ltd. for multi-element analysis. These samples were sieved to –80 mesh prior to analysis by both inductively coupled plasma optical emission spectroscopy (ICP–OES) and instrumental neutron activation analysis (INAA). These samples are referred to hereafter as the –80 mesh bulk geochemistry samples.

The 35 element INAA package included Au, Ag, As, Ba, Br, Ca, Co, Cr, Cs, Fe, Hf, Hg, Ir, Mo, Na, Ni, Rb, Sb, Sc, Se, Sn, Sr, Ta, Th, U, W, Zn, La, Ce, Nd, Sm, Eu, Tb, Yb and Lu. A total acid digestion (HNO_3–$HClO_4$–HF–HCl) was carried out on sample pulps prior to ICP–OES analysis of 19 elements that included Cu, Pb, Zn, Ag, Mo, Ni, Mn, Sr, Cd, Bi, V, Ca, P, Mg, Ti, Al, K, Y and Be.

Some of the 250 g field geochemistry samples had to be discarded due to identification problems. It was decided to try and recover these samples by sub-sampling the larger 20 to 30 kg samples that were submitted to Consorminex Inc. Unfortunately, Consorminex had already begun processing the bulk samples, so a decision was made to sub-sample from the tabled concentrates. The sub-samples were taken from the –60 mesh (<0.25 mm) fraction that remained following removal of the magnetic fraction, tabling and sieving (indicator mineral picking was carried out on the 0.25 to 1.7 mm fraction). Since these sub-samples are enriched in heavy minerals, the results cannot be directly compared to the –80 mesh geochemistry data. A decision was therefore made to analyze all of the –60 mesh non-magnetic tabled concentrates for a comparative study.

Normal procedures utilized by the OGS for sample submission protocols dictate that blind duplicates and standard reference materials (SRMs) be inserted into individual sample batches. It should be noted here that the information received by the OGS makes no reference to quality control protocols. As such, no guarantees can be provided as to the precision or accuracy of the results presented herein. It is therefore suggested that the results presented with this report be treated with reasonable caution.

Results and Discussion

KIMBERLITE INDICATOR MINERALS

Probably the most widely used technique in the early stages of diamond exploration programs is heavy mineral sampling (Fipke et al. 1995). This technique is designed to recover from surficial materials a unique group of minerals that formed at extremely high pressures in an environment that may host diamond. Since these minerals are far more abundant than coexisting diamonds in the mantle environment, surficial exploration programs focus on the recovery of indicator minerals rather than diamonds for obvious practical reasons. Fortunately, the key indicator minerals are resistant to weathering and survive extremely well in the secondary environment, even in highly weathered terrains. The most important indicator minerals are Cr-pyrope garnet, Mg-ilmenite and chromite. Cr-diopside and olivine may also be important indicator minerals in immature postglacial weathering environments such as those found in northern Canadian climates.

It is important to recognise that kimberlitic magmas and diamonds are petrogenetically unrelated. Kimberlite magmatism represents one of only 2 known types of transportation mechanisms (the other being lamproite) capable of delivering economically viable diamond deposits to the Earth's surface. These magmas must form at extreme depths (in excess of 150 km) in order to tap the regions of the sub-cratonic lithosphere where diamonds are stable. Diamonds, therefore, represent foreign xenocrysts that are sampled in the Earth's upper mantle and transported and erupted within the kimberlitic magma. Extensive studies of both mineral inclusions within diamonds and diamondiferous xenoliths have revealed 2 major modes of occurrence. These include peridotitic and eclogitic paragenesis (Gurney 1984). The transportation and subsequent disaggregation of these xenoliths during the eruption process is the mechanism by which both diamonds and associated indicator minerals become liberated from their mantle host rocks.

The recognition that peridotitic (P type) diamonds are more common than their eclogitic (E type) counterparts at most mine sites (Orapa, Botswana and Argyle, Australia are notable exceptions) provides the reasoning as to why the major focus of indicator mineral surveys is on the recovery of the Cr-rich minerals typical of peridotite xenoliths (Gurney 1984). The minerals of particular interest include Cr-pyrope garnet, chromite and Cr-diopside. These minerals co-exist with olivine and orthopyroxene in the peridotite assemblage and the variation in modal proportions of clinopyroxene, orthopyroxene and olivine provide the basis for classifying peridotite xenoliths (harzburgite, lherzolite and websterite for example). Studies of mineral inclusions within "P type" diamonds have shown that the harzburgite assemblage is the most important source of diamonds. Furthermore, the compositions of Cr-pyrope garnets and chromites from diamond-bearing harzburgites are somewhat unique and the recovery of these types of KIMs in regional sampling programs can be used to predict the potential of a particular survey area to host diamonds.

Other important KIMs include the megacryst (or discrete nodule) suite which are believed to be high-pressure cognate phases (Mitchell 1986). The most important of these include Mg-rich ilmenites and Cr-poor pyrope garnets, both of which are visually distinctive and have compositional characteristics that can be linked to kimberlitic magmatism. Eclogitic garnets may also be important, however, they tend to be less abundant than their peridotitic counterparts and are more difficult to distinguish from garnets of shallower crustal origin due to similarities in colour. Focus on the recovery of eclogitic garnets can therefore increase the cost of an exploration program since electron microprobe analysis will be required for all garnets that share this similar physical characteristic.

The approach that the OGS has taken towards KIM surveys is to isolate Cr-pyrope garnet, Mg-ilmenite, chromite, Cr-diopside and olivine from modern alluvium or till samples and to carry out electron microprobe analysis on each of the grains. The confidence with which true KIMs can be isolated from overburden samples is dependent not only on the type of mineral, but also the environment from which the sample was collected. For example, Cr-pyrope garnet and Mg-ilmenite can be isolated with a great deal of confidence relative to other KIMs, especially when working in terrains where chromite and Cr-diospide have intense regional signatures. Such is the case for the OTH Kapuskasing Structural Zone survey where regional uplift has resulted in the exposure of a mid-crustal section represented by the transition from low- through high-grade terrain. In such environments, Cr-diopside and chromite grains are extremely common in modern alluvium samples (Ontario Geological Survey 2001a, 2001b, 2001c and 2001d) making it both difficult and expensive to properly identify KIMs. Conversely, it can be expected that a survey carried out over Paleozoic terrain, such as that present in the James Bay Lowlands, should be quite different in that much of this "background" contribution would not be present.

The results of the heavy mineral processing are reported in Appendix B and the microscopic examination of the heavy mineral concentrates and picking notes for kimberlite indicator minerals are presented in Appendix C. Three KIM populations were identified including garnet, ilmenite and Cr-diopside. Chromites were identified mainly through microprobe analysis of grains picked as ilmenites. Olivines were identified in the notes presented in Appendix C, but were not picked. The reader needs to be aware that in most OGS modern alluvium surveys chromite makes up a significant component of the picked fraction. This is probably due to a combination of factors, one of which may include different procedures followed by Overburden Drilling Management Ltd. (ODM) and Consorminex Inc. It may also be due to differing philosophies on the value of chromite as a KIM since, as mentioned above, it can be a very common accessory phase in crustal rocks. It is therefore necessary to exercise caution when directly comparing KIM counts between the Spider 3 survey and other OGS projects.

The results of the picking demonstrate that, in general, the indicator mineral counts are quite low. The low counts may be due to a series of factors which could include one or more of the following:

1. kimberlites are not abundant in this area;
2. indicator minerals are not abundant in the kimberlite bodies within the area, such is the case for the Kyle Lake pipes;
3. sample density is too low;
4. in places, the rivers are not sufficiently incised in the underlying tills to erode out indicator grains present in the till.

The results of the individual KIM categories are discussed below. It should be noted that the techniques used to isolate KIMs from other types of minerals are based on published techniques that are continually being modified to reflect new ideas. The current system that is used by the OGS is based on a step by step process that will not be re-iterated here, and it is suggested that the reader refer to previously published material (Ontario Geological Survey 2001d) for a review.

Garnet

A total of 118 prospective garnets were isolated from the 625 samples collected in the Spider 3 survey area. All of the garnet candidates picked by Consorminex Inc. classify as peridotite garnets based on the use of Cr_2O_3, CaO and TiO_2 as discriminants from the microprobe data supplied in Appendix D (MRD 109: Crabtree and Gleeson 2003). Figure 7 shows the distribution of Cr-pyrope peridotite garnets on the CaO vs Cr_2O_3 (wt%) binary plot. Single Ca-depleted G10 garnets were recovered from samples 96P208 (Area B) and 96P196 (areas indicated in Figure 8). Samples 96P020, 96P137, 96R060 (Area A), 96R081 (Area C), 96R101, 96R144 and 96R155 all have single Cr-pyrope compositions that would classify as G10 garnets, although the degree of Ca depletion relative to the overall G9 lherzolitic trend is marginal.

The regional distribution of Cr-pyrope garnets is shown in Figure 8. There are 2 areas where clusters of at least two sample sites produced 3 or more Cr-pyrope garnets. The first of these areas is located on the western tributaries that feed into the Ekwan River (Area A). This area has a total of 8 Cr-pyropes recovered from sample 96R014 and 4 Cr-pyropes from 96R060. The second area of interest (Area B) is located on the upper reaches of the southern Ekwan River tributary systems in the southwest part of the study area. Here, 4 Cr-pyrope garnets were recovered from sample 96R147 and 3 Cr-pyropes were recovered from 96R148. The third area of interest (Area C) is located on the Winisk River system in the northwest part of the survey area. Sample 96R083 produced 4 Cr-pyropes and 96R081 produced 3 Cr-pyropes.

There is also a single sample site (96R025) associated with the Winiskisis Channel in the northwest corner of the survey area that produced 3 Cr-pyrope garnets. Also worth noting is a single till sample (96P204) in the southern part of the survey area that produced 2 Cr-pyrope garnets. In addition to these anomalous sites, there are numerous sample sites that contain 1 or 2 Cr-pyropes and are, in general, uniformly distributed throughout the survey area. Whether this number of grains represents a regional background signature is not clear.

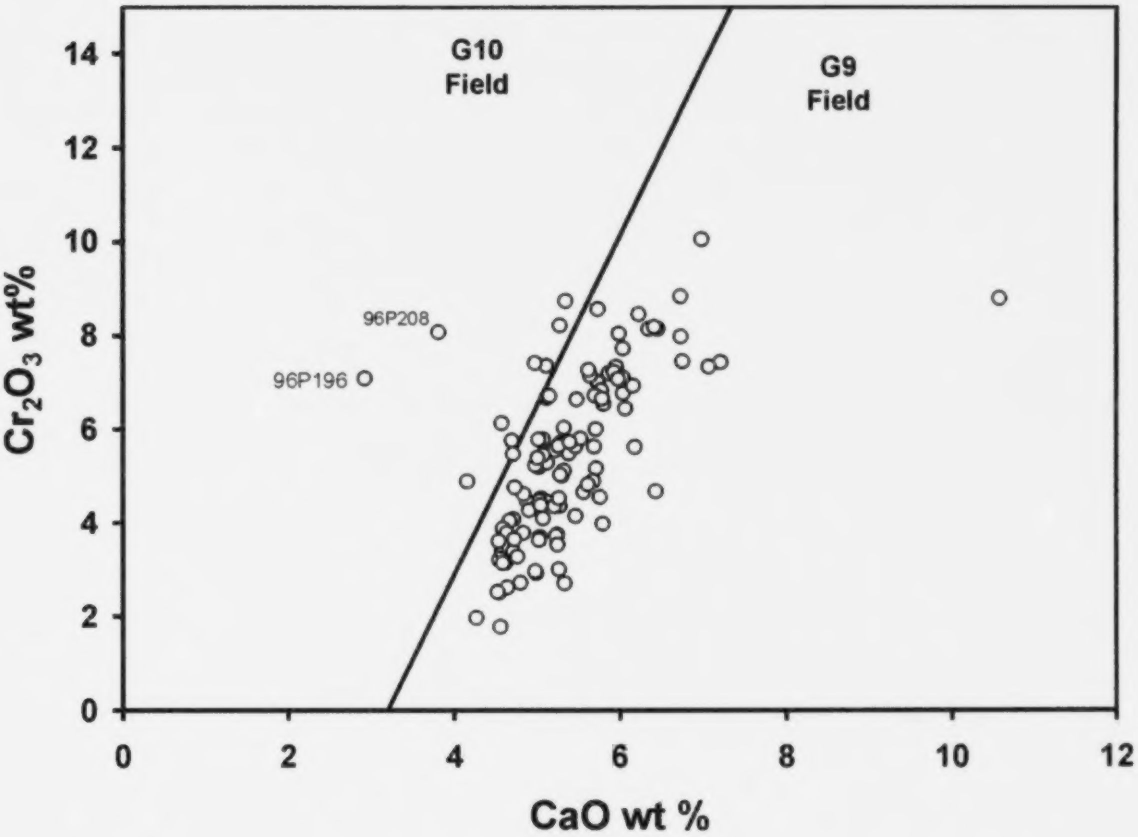


Figure 7. CaO vs. Cr_2O_3 plot for Cr-pyrope garnets recovered from the Spider 3 survey area.

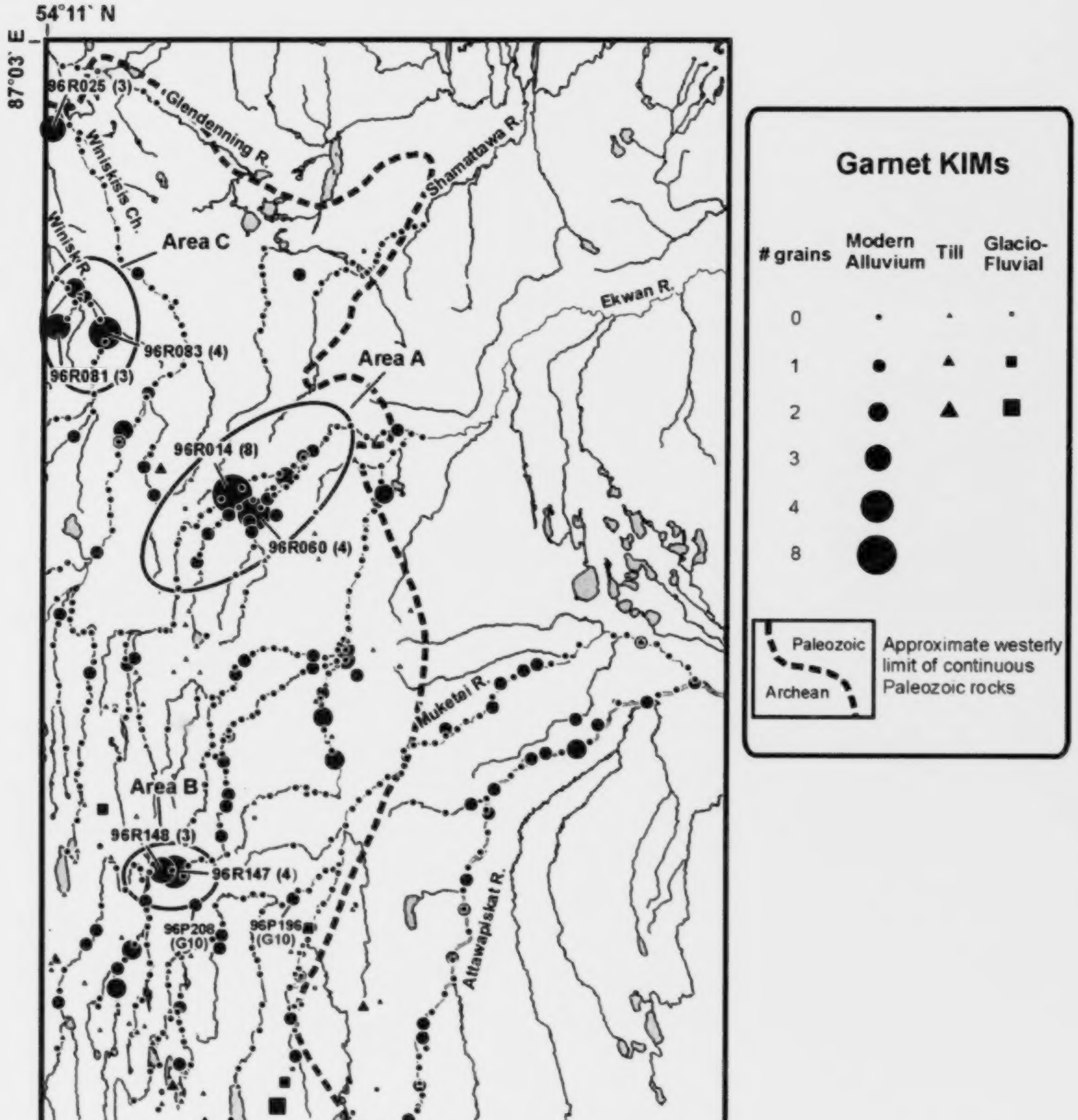

54°11` N
87°03` E
96R025 (3)
Glendenning R.
Winiskisis Ch.
Shamattawa R.
Winisk R.
Area C
96R083 (4)
96R081 (3)
Ekwan R.
Area A
96R014 (8)
96R060 (4)
Muketei R.
Area B
96R148 (3)
96R147 (4)
96P208 (G10)
96P196 (G10)
Attawapiskat R.
96P204 (2)
N
0
30
Kilometres
85°15` E
51°58` N
Garnet KIMs
# grains
Modern Alluvium
Till
Glacio-Fluvial
0
1
2
3
4
8
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

Figure 8. Regional distribution of Cr-pyrope garnets recovered from the Spider 3 survey area.

Magnesium-rich Ilmenite

In this study, ilmenites were picked on the basis of appearance and placed into 2 categories. Only a small portion of the KIM candidates were actually mounted for electron microprobe analysis and, as a result, it is difficult to assess the true distribution of Mg-ilmenite, since microprobe data is of critical importance in the classification scheme. To overcome this problem, the total number of prospective grains outlined in Appendix C (82 grains) have been utilized in order to define a statistically representative number of grains for the region. Results of the microprobe data presented in Appendix D show that the majority of the prospective ilmenite KIMs mounted for probe analysis were in fact Mg-ilmenites and, as such ,a reasonable degree of confidence can be placed on the visual classification of the grains.

The compositional distribution of the probed ilmenites is shown in Figure 9. All of the Mg-rich ilmenites have >2 wt% Cr_2O_3 concentrations, leaving little doubt that these are from kimberlites and not melnoites. The regional distribution of Mg-ilmenite (Figure 10) highlights 2 key areas of interest. The first is area A, where numerous samples produced 3 or more Mg-ilmenites, including 96R014 (13 Mg-ilmenites), 96R017 (6 Mg-ilmenites), 96R046 (3 Mg-ilmenites) and 96R058 (3 Mg-ilmenites). Area D has been highlighted in Figure 10, since it has 1 sample site with 3 Mg-ilmenites (96R076) and 2 sample sites with 2 Mg-ilmenites. Other single samples with at least 3 Mg-ilmenites include site 96R078 (Area C) located in the northwest part of the survey area on the upper reaches of the Winisk River.

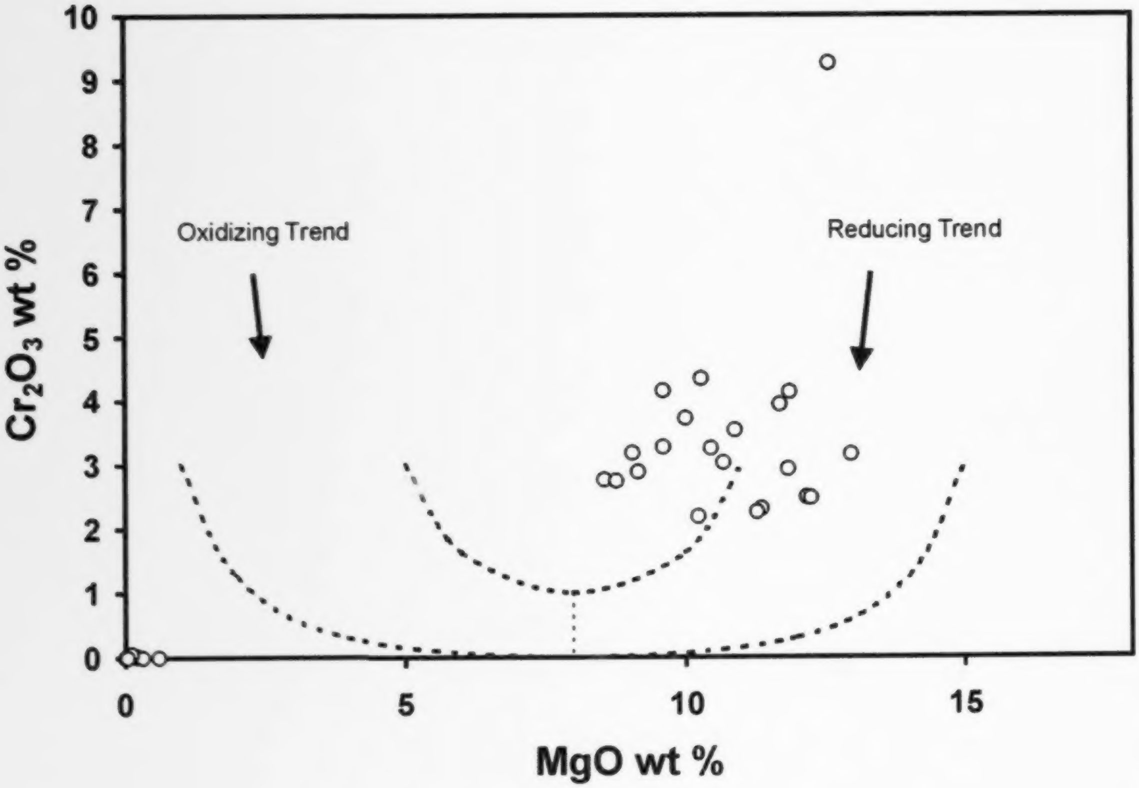


Figure 9. MgO vs. Cr_2O_3 plot for Mg-ilmenites recovered from the Spider 3 survey area.

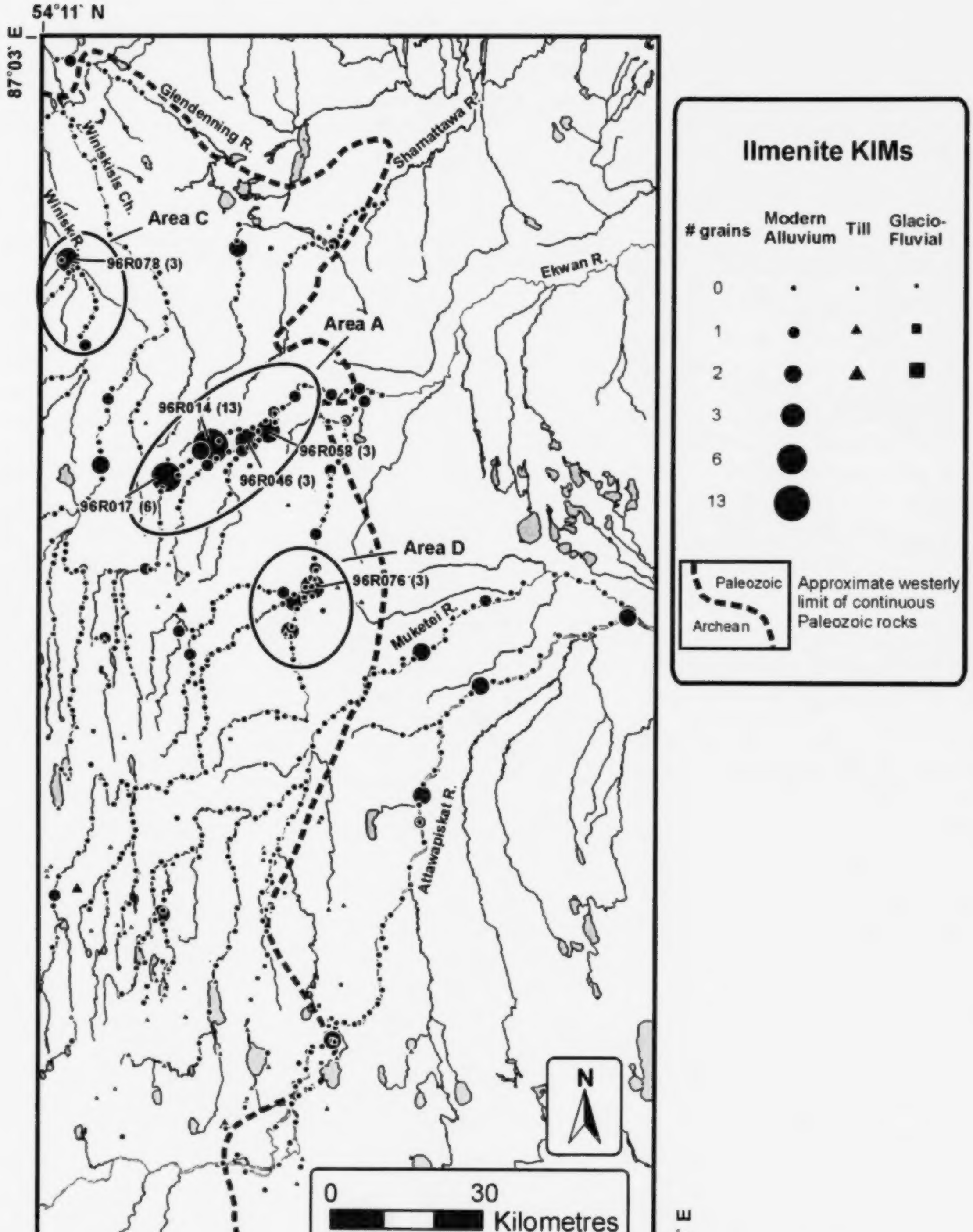

54°11' N
87°03' E
85°15' E
51°58' N
Glendenning R.
Shamattawa R.
Winiskisis Ch.
Winisk R.
Area C
96R078 (3)
Ekwan R.
Area A
96R014 (13)
96R058 (3)
96R046 (3)
96R017 (6)
Area D
96R076 (3)
Muketei R.
Attawapiskat R.
Ilmenite KIMs
# grains
Modern Alluvium
Till
Glacio-Fluvial
0
1
2
3
6
13
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres

Figure 10. Regional distribution of Mg-ilmenites recovered from the Spider 3 survey area.

Chrome Diopside

A total of 50 Cr-diopsides and 71 low Cr-diopsides were picked by Consorminex Inc. All of the Cr-diopsides were analysed by electron microprobe and the data is presented in Appendix D. Classification of the clinopyroxenes has been carried out using a combination of ternary and binary projections. This approach, which is continually evolving, was developed by the OGS in order to deal with the large clinopyroxene populations that are commonly encountered in secondary environment samples collected throughout northern Ontario. It is a two-step procedure that utilizes known geochemical constraints for lherzolitic clinopyroxenes isolated from kimberlites.

The first step in this procedure is to use a ternary projection of atomic Al–Na–Cr (Figure 11). Analyses that plot within the illustrated template have similar atomic ratios of these elements relative to those observed in clinopyroxenes found in kimberlitic hosted lherzolites. However, compositional overlap with non-kimberlitic Cr-diopsides (see OGS 2001c for a review) requires that these data are also viewed using the Na_2O wt% vs. atomic Ca/(Ca+Mg) binary plot (Figure 12). Analyses that fall into both templates can be considered as important KIMs. The results of this survey illustrate that only 2 of the grains have compositional characteristics that are consistent with those found in kimberlitic hosted lherzolite xenoliths. As such, a regional proportional dot map of the clinopyroxene population is not warranted. The samples that produced these single grains include 96P132 and 96P304.

Chromite and Olivine

Chromite grains do not appear to have been rigorously picked during this study. The limited number of analyses presented here represent a few grains that were mounted as chromites plus a few others that were picked as prospective ilmenites. The results of the probe data show that none of the grains fall within the diamond inclusion field on the MgO vs. Cr_2O_3 plot (Figure 13a). Similarly, none fall within the field unique to kimberlites and lamproites on the Fipke et al. (1995) TiO_2 vs. Cr_2O_3 plot (Figure 13b). Samples 96R017 (Area A) and 96R205 have single grains with highly depleted TiO_2 and moderate Cr_2O_3 concentrations. As such, these grains fall on a compositional trend observed in kimberlites from the Attawapiskat pipes, which plot along an arc that trends from moderate Cr_2O_3 and depleted TiO_2 compositions through to high Cr_2O_3 and TiO_2 compositions (see OGS 2001d for a review). It can be argued that these grains are prospective KIMs, but since only 2 grains are identified, there is no need to display a proportional dot map for the survey area.

While olivine was not picked by Consorminex Inc., the reader needs to be aware that there is mention of samples that contain olivine grains in the comments column of Appendix C.

Areas of Interest

Prior to interpreting the results of the KIM data, the reader needs to be aware that during processing some of the heavy mineral fractions were picked in their entirety while others were not. For obvious reasons, this can lead to problems with data interpretation. The normal procedure when picking KIMs would be to avoid picking all of the >3.2 S.G. fraction only if the sample contains a very large number of indicator minerals. In this way, an estimated number of KIMs can be calculated from the total number of grains picked from a split of the heavy mineral concentrate. For the Spider 3 survey, an initial batch of samples were picked in their entirety and all subsequent samples were split so that approximately 10 g of heavy concentrate (if available) was thoroughly picked. In this situation, data normalization becomes difficult since a correction factor cannot improve a count of zero KIMs for any given sample. This becomes an important consideration for those samples where the split size was significantly less than the size of the original heavy concentrates.

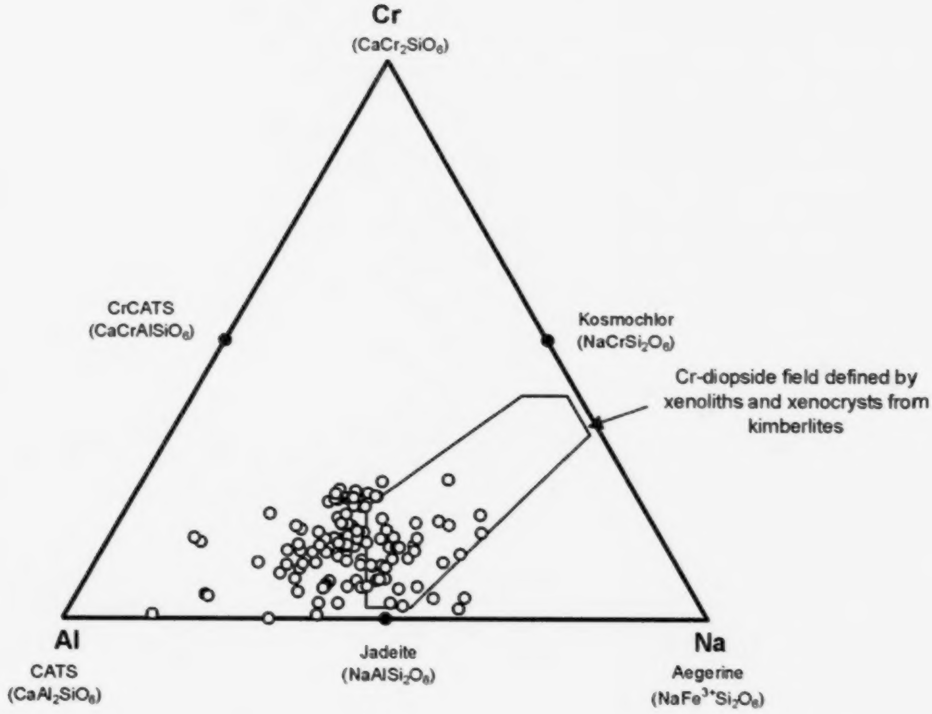


Figure 11. Al–Na–Cr (atomic) ternary diagram for clinopyroxenes recovered from the Spider 3 survey area.

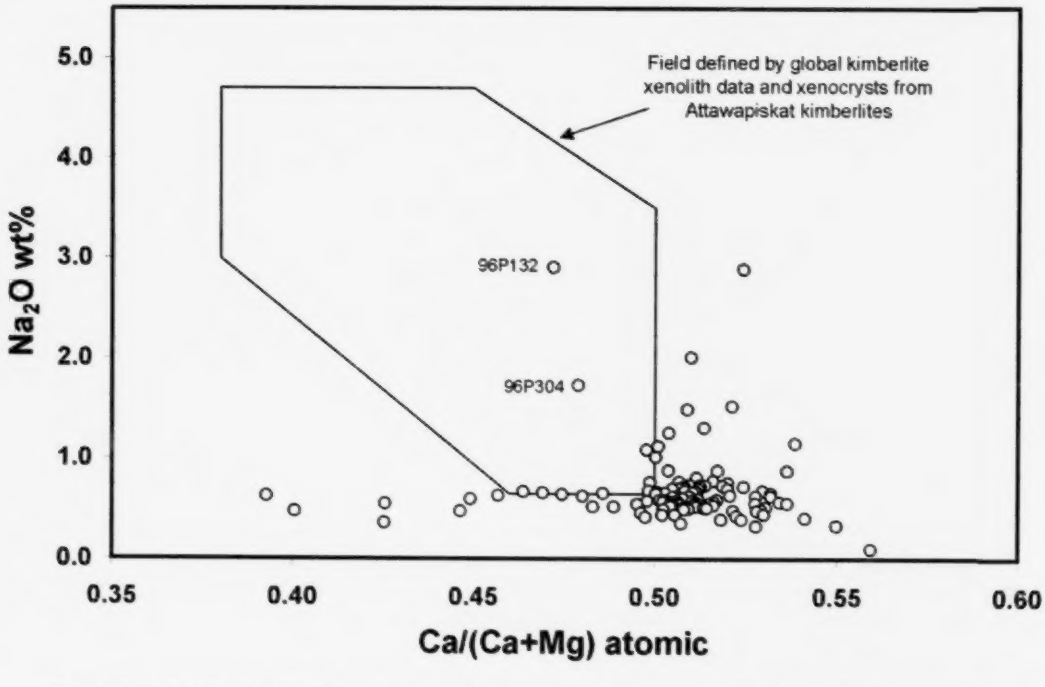


Figure 12. Ca/(Ca+Mg) vs. Na$_2$O plot for clinopyroxenes recovered from the Spider 3 survey area.

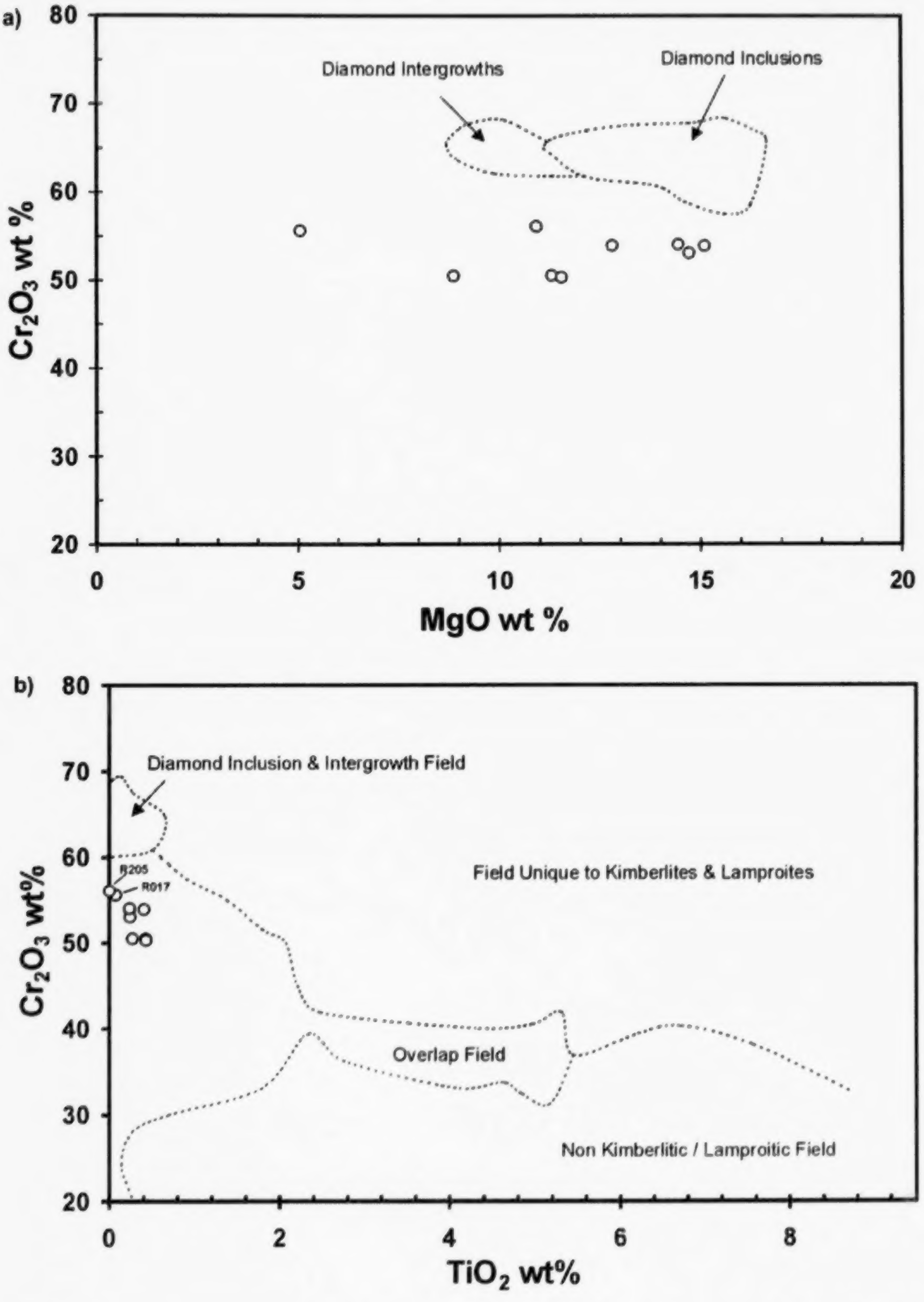


Figure 13. a) MgO vs. Cr$_2$O$_3$ plot for chromites recovered from the Spider 3 survey area. b) TiO$_2$ vs. Cr$_2$O$_3$ plot for chromites recovered from the Spider 3 survey area.

In order to assess this problem, the authors have investigated the viability of normalizing the data to both the total weight of the heavy concentrates and also to a standardized split weight of 10 g. Each approach does affect the broad regional character of KIM distribution in slightly different ways and, in some cases, enhances the importance of individual sample sites. However, the location and character of the most important KIM anomaly (Area A) remains the same and, for this reason, we have decided to present the data as supplied without implementing any normalization calculations. The reader is encouraged to use the information provided in Appendixes B and C in order to thoroughly evaluate the use of normalization factors in the interpretation of the data.

Figure 14 shows the distribution of total KIM anomalies in the survey area. For this proportional dot diagram, only the Cr-pyrope and Mg-ilmenite data have been included and combined to produce a total KIM count. The key area of interest here (Area A) is located around the western tributaries of the Ekwan River system. Sample 96R014 produced 8 Cr-pyrope garnets and 13 prospective Mg-ilmenites, the highest number of KIMs from a single sample collected in the Spider 3 survey area. The area is interesting from a structural standpoint in that it is characterized by northeast-trending faults that intersect the northwest-trending Kenyon fault located about 10 km to the north. Geologically, the area is underlain by granitic rocks and mafic volcanic units with gabbroic rocks being interpreted next to the Kenyon fault (Thurston et al. 1979).

While other areas indicated in Figure 14 are not as noteworthy, some attention is warranted. As mentioned previously, Area B, which is located on the southern tributaries of the Ekwan River, has 2 sample sites (96R147 and 96R148) of interest that are both Cr-pyrope anomalies. This area is located north of a series of crosscutting faults and geologically is underlain by granitic/tonalitic terrain.

Area C located on the Winisk River system has one sample (96R078) which produced 3 Mg-ilmenites and 2 Cr-pyrope garnets, as well as 2 other samples that produced 3 or more Cr-pyropes. This area is structurally interesting as the Kenyon fault cuts through the area immediately south of the sample sites. Geologically, the area is underlain by metavolcanic and tonalitic terrain.

Area D is located in the central part of the study area and is characterized by numerous individual sample sites that have 3 or less Mg-ilmenites or 2 or less Cr-pyropes. This area is underlain by metavolcanic and tonalitic terrain.

Finally, there are a few noteworthy single sample sites with at least 4 KIMs that are also highlighted in Figure 14. These include sample 96P304, collected on the lower Attawapiskat River at the east-central margin of the survey area, that produced 1 Cr-pyrope, 2 Mg-ilmenites and 1 kimberlitic Cr-diopside and sample 96R240, which was collected on the upper Attawapiskat River in the southern part of the survey area. This sample produced 2 Cr-pyropes and 2 Mg-ilmenites.

GEOCHEMISTRY

The geochemistry results presented in Appendix E (MRD 109: Crabtree and Gleeson 2003) are from 2 distinct sample components and, therefore, must be treated on an individual basis prior to interpretation. The –80 mesh bulk geochemistry samples represent the –80 mesh (< 177 μm) component of the bulk sample whereas the –60 mesh (<250 μm) samples were sub-sampled from the non-magnetic tabled concentrate isolated during heavy mineral processing. As such, it can be expected that the –60 mesh concentrate results will demonstrate some degree of bias towards minerals typically concentrated in the non-magnetic heavy mineral fraction. Since water is used in the tabling process, it can also be expected that much of the clay and fine silt material will have been washed away from the –60 mesh samples producing an additional bias toward the coarser silts and fine sand fractions.

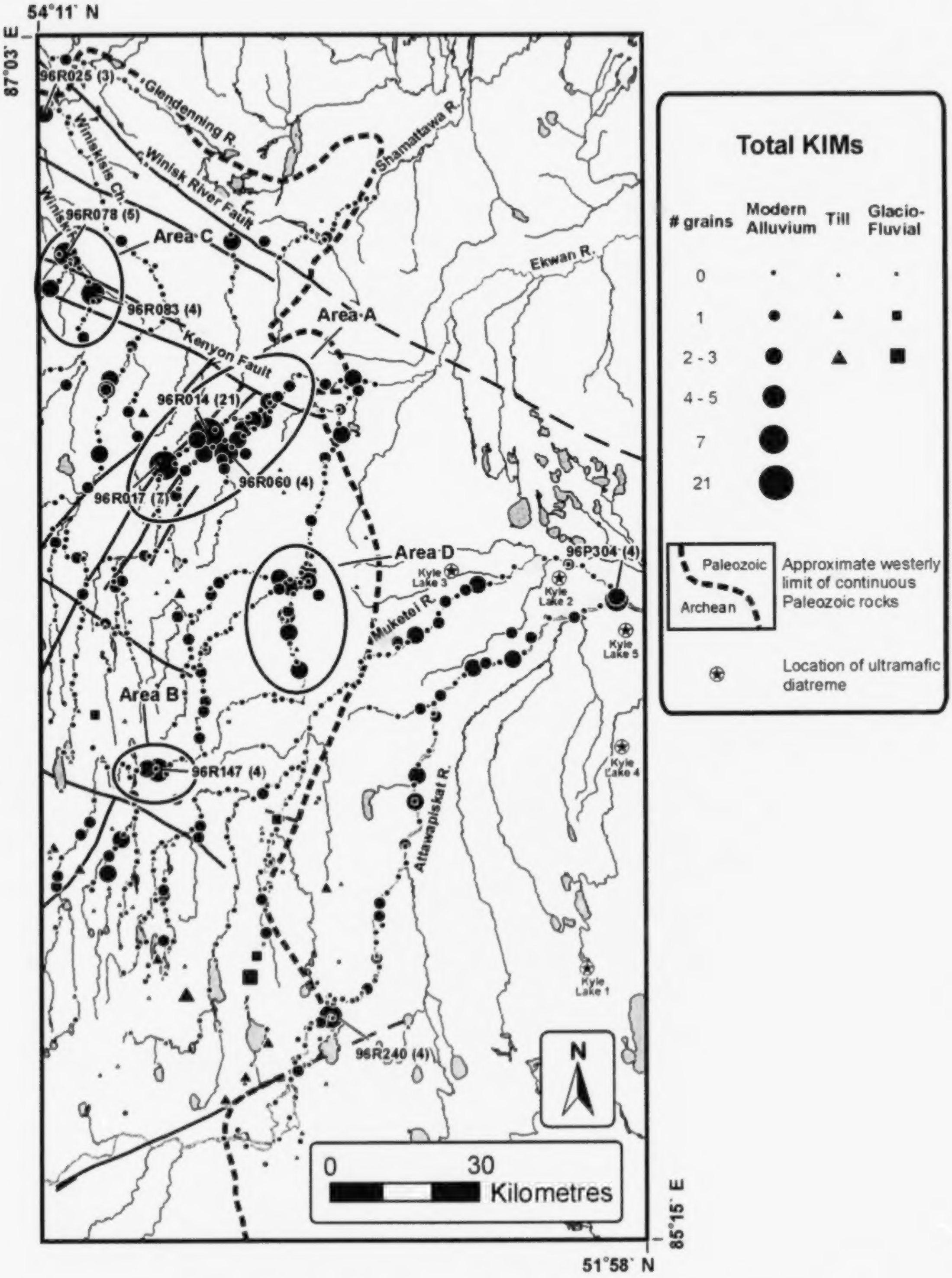

54°11' N
87°03' E
51°58' N
85°15' E
Total KIMs
# grains
Modern Alluvium
Till
Glacio-Fluvial
0
1
2 - 3
4 - 5
7
21
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
Location of ultramafic diatreme
Glendenning R.
Shamattawa R.
Winiskisis Ch.
Winisk River Fault
Winisk R.
Ekwan R.
Kenyon Fault
Area A
Area B
Area C
Area D
96R025 (3)
96R078 (5)
96R083 (4)
96R014 (21)
96R017 (7)
96R060 (4)
96P304 (4)
96R147 (4)
96R240 (4)
Muketei R.
Attawapiskat R.
Kyle Lake 1
Kyle Lake 2
Kyle Lake 3
Kyle Lake 4
Kyle Lake 5
N
0
30
Kilometres

Figure 14. Regional distribution of total KIMs recovered from the Spider 3 survey area.

These differences in sample composition can actually be advantageous if the ore and/or pathfinder elements are present in resistate minerals since these minerals can accumulate in the heavy mineral concentrates, thereby enhancing a regional signature that may otherwise be overlooked. In addition, information regarding the general provenance of local bedrock can be interpreted by considering both sample sets as well as the total magnetic fraction isolated during heavy mineral concentration.

Another important factor to be taken into account when interpreting the data is the sampling media. The majority of samples collected during the Spider 3 survey are from modern alluvium with far fewer tills and glaciofluvial samples. These 3 sampling media are deposited as a result of very different geological processes. As such, the reader needs to be aware that anomalous data that are observed in one type of sample media and not in another can be attributed to many factors. For example, a study of till geochemistry and mineralogy (Shilts and Kettles 1990) demonstrated that geochemical variations can be strongly influenced by both the redox conditions and sample particle size. Their study illustrated numerous examples where base metals are observed to be more concentrated in the clay fraction versus the coarser heavy mineral fraction of surface/near surface oxidized tills. In deeper amples collected from unoxidized horizons the reverse trend can be observed. This suggests that, during weathering, the chalcophile elements are mobilized and then re-precipitated possibly through adsorption on phyllosilicate minerals (McMartin and McClenaghan 2001) and/or into aggregates or crystal structures of secondary oxides and hydroxides. It is for this reason that many till sampling programs utilize a relatively fine-grained sieve fraction (typically <63 um) for geochemical analysis. The bulk geochemical analysis of tills sampled in this survey were sieved to –80 mesh (<177 um) and, therefore, may contain a higher fine-sand component that may in turn dilute the signature of chalcophile elements.

Local bedrock provenance may also be better represented in sub-glacial till samples when compared to modern alluvium or glaciofluvial samples. The degree to which local geochemical signatures are represented in modern alluvium samples will depend to a great extent on whether the drainage system in question significantly incises overburden and/or bedrock. Many of the alluvium samples were collected at locations where the rivers do incise bedrock (see outcrop locations on Figure 4b). The collected glaciofluvial samples were taken primarily from an esker system that runs through the southern part of the survey area in the vicinity of the tributaries along the upper reaches of the Muketei River. As such, these samples probably contain a larger component of distally derived material that may be reflected in the geochemistry results.

The approach taken here is to present the proportional dot maps (Appendix F) of both data sets for elements that exhibit anomalous trends and that are of acceptable precision. Acceptable precision is defined here as data that exceed the limit of quantification for a given element. The interpretation of the proportional plots is based on the use of percentiles to highlight anomalous areas. The use of the term "elevated" is used for those samples where a particular element occurs above the 90th percentile, "anomalous" is applied to those samples where a particular element occurs above the 95th percentile and "highly anomalous" is used for those elements that occur at concentrations greater than the 98th percentile. Areas of interest are identified based on locations where multiple sample sites are either anomalous or highly anomalous with respect to a particular element. As such, this is a somewhat subjective procedure and the presence of single anomalous sites may be of importance and, therefore, should not be totally disregarded by the reader.

Areas of Interest

The Spider 3 survey covers a relatively large area that is characterized by diverse geology and major crosscutting faults. Therefore, numerous geochemical anomalies should not be unexpected. Figure 15 lists a total of 22 areas that have been identified here as noteworthy. The types of anomalies, together with the appropriate sample fractions from which these anomalies are derived, are presented in Table 1.

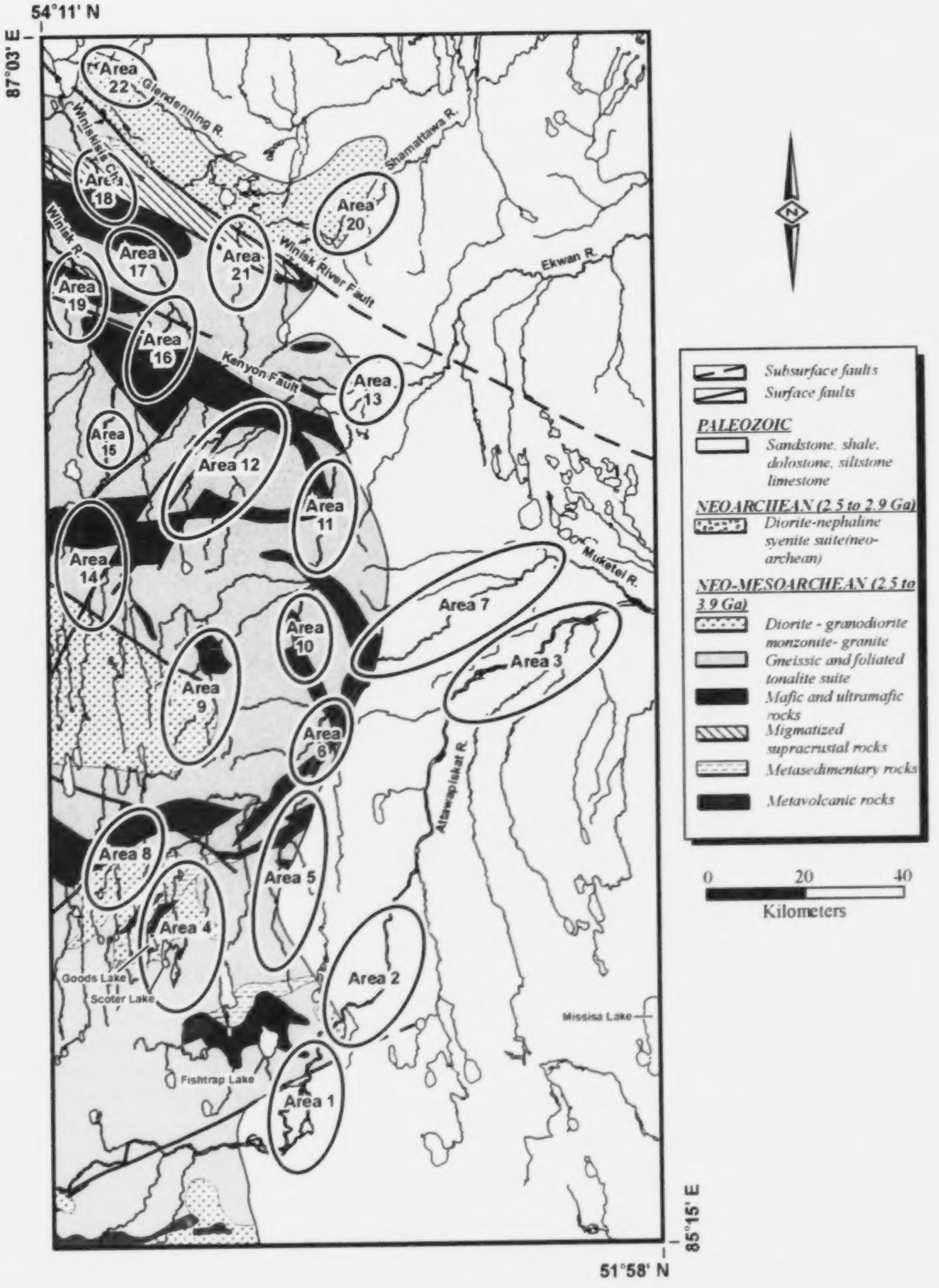

54°11' N
87°03' E
51°58' N
85°15' E
Area 22
Glendenning R.
Winiskisis Ch.
Area 18
Shamattawa R.
Area 20
Winisk R.
Area 17
Area 21
Winisk River Fault
Area 19
Ekwan R.
Area 16
Kenyon Fault
Area 13
Area 15
Area 12
Area 11
Area 14
Muketei R.
Area 7
Area 10
Area 3
Area 9
Area 6
Attawapiskat R.
Area 8
Area 5
Area 4
Goods Lake
Scoter Lake
Area 2
Missisa Lake
Fishtrap Lake
Area 1
N
Subsurface faults
Surface faults
PALEOZOIC
Sandstone, shale, dolostone, siltstone limestone
NEOARCHEAN (2.5 to 2.9 Ga)
Diorite-nephaline syenite suite(neo-archean)
NEO-MESOARCHEAN (2.5 to 3.9 Ga)
Diorite - granodiorite monzonite- granite
Gneissic and foliated tonalite suite
Mafic and ultramafic rocks
Migmatized supracrustal rocks
Metasedimentary rocks
Metavolcanic rocks
0
20
40
Kilometers

Figure 15. Location of geochemically anomalous areas based on the results from both –80 mesh bulk sample and –60 mesh non-magnetic tabled concentrate data.

Table 1. Summary table of geochemically anomalous areas. Note that the highlighted areas may indicate as much about general provenance as they do about potential for mineralization. Anomalous areas are for modern alluvium unless otherwise indicated with superscripted letters that are presented as follows: T, prominent in till; G, prominent in glaciofluvial material; A/*, prominent in alluvium and/or till/glaciofluvial material.

Area of interest	–80 mesh bulk sample	–60 mesh non-mag tabled concentrate	Other
Attawapiskat River			
Area 1	Au	V^{G}, REE, Th, U$^{A/G}$, Y$^{A/G}$, Hf$^{A/G/T}$, Sc$^{A/T}$, Ti$^{A/T/G}$	High Magnetite
Area 2	Cr, Ni^{G}, Cu, Au$^{A/T}$, Pb^{G}, REE^{G}	V^{G}, Ti, Cr, Fe, Au, REE, Th, Cu	High Magnetite
Area 3	Ca, Mg, Cr, Hf, REE	Fe	
Muketei River			
Area 4	Ti$^{A/T}$, Ni$^{A/T}$, Cu$^{A/T}$, Au^{T}, Hf^{T}, Sc$^{A/T}$, Sr^{T}, P$^{A/T}$, Y^{T}, Zn	Al$^{A/T}$, Au^{T}, Sc^{T}, Sr$^{A/T}$, P$^{A/T}$, Cu^{T}	
Area 5	K, Cr$^{A/G}$, Fe$^{A/G}$, Ni^{G}, Zn, As, Mn, Cu^{G}	V^{G}, Cr$^{A/G}$, Hf$^{A/G}$, Th, U, Co$^{A/G}$, Sr, Zn, Sc$^{A/G}$	High Magnetite
Area 6	Ti^{T}, Ni$^{A/T}$, Cu$^{A/T}$, Sc^{T}, Sr^{T}, P^{T}, Y^{T}, REE, Hf	Fe, Ti, REE, Co, Y, U	High Magnetite
Area 7	Ca, Mg, Cr	Fe, Ti,Au	
Ekwan River			
Area 8	Zn, As	Mg, Sc, Au^{T}, Ni$^{A/T}$	
Area 9	Zn, As, Au, P	Na, Al, K, Co, Cu, Au	
Area 10	Zn, As, Mn	Ti$^{A/T}$, Ni, Co$^{A/T}$	
Area 11	Ca^{T}, Mg^{T}, Au	V, Ti, Mn, Au, Y, Pb	High Magnetite
Area 12	Na, Al, K, V, Ti, Fe, As, Pb, P, Sr, Cr, Ni, Zn, Sr, Hf, REE, Th, Y	Na, K, Mn, Mg^{T}, V, Ti, Au, Hf$^{A/T}$	High Magnetite
Area 13	Au, Th	Fe, Au, Pb	High Magnetite
Winiskisis Channel			
Area 14	Al, Na, Mn, V, Ti, Ni, Zn, Au, Sc, Sr, P	Mg, Na, Co$^{A/T}$, Sc, Ni, Zn, Au	
Area 15	Au	Na, K, Au	
Area 16	Cu, Cr	Ni	
Area 17	Pb	Ti, Mn, Fe, Au, REE, Th, U, Pb	High Magnetite
Area 18		Ti, Mn, Fe, REE, Th, U, Pb	High Magnetite
Winisk River			
Area 19		K, V, Ti, Mn, REE, Th, U, Y, Pb	High Magnetite
Shamattawa River			
Area 20	V, Mn, Fe, As, P, Au, Cu	Na, K, Cu, Zn, Au	
Area 21		Cu	
Glendenning River			
Area 22	Fe, Th, REE, Au, Hf, Sc	Cu, Pb, Zn	

It should be emphasized that these areas simply highlight sample locations that are anomalous with respect to a given element that, in some cases, may indicate more about general provenance than a particular type of mineralization. However, there are a number important aspects about some of the identified areas that require particular attention.

Provenance

Much can be learned about the underlying bedrock in the survey area from the geochemistry results. The Mg and Ca data from the –80 mesh bulk samples display a somewhat expected trend of enrichment along the Attawapiskat (Area 3) and Muketei (Area 7) rivers where these drainage systems incise the Paleozoic rocks. Similarly, the total magnetic fractions recovered prior to heavy mineral concentration are generally anomalous in the same areas that display high magnetic relief as shown on aeromagnetic maps of the area (ODM–GSC 1963, 1969a, 1969b, 1969c). Almost all of the areas that are anomalous with respect to magnetite are also anomalous with respect to Fe and Ti in the –60 mesh sample concentrates, likely reflecting the presence of ilmenite.

A very distinct Cr anomaly is observed in both sample fractions for Areas 2 and 5, which correspond to the upper reaches of the Attawapiskat and Muketei rivers, respectively. It is highly probable that these anomalies are related to the gabbroic and/or nepheline-syenite complexes located in the vicinity of Fishtrap Lake. Highly anomalous Cr values are recorded for up to 30 km down stream on the upper reaches of the Muketei River (Area 5) indicating that dispersion distances in modern alluvium for highly resistate minerals such as chromite can be substantial.

Base Metals

The concentration of base metals observed in the samples reported here are generally low (Zn is an exception in that it is elevated relative to Ni, Cu, and Pb). However, a thorough evaluation of the base metal potential of the survey area can not be completed based on the results presented here since the sampling media that was collected is probably less than ideal. Since sulphide minerals are at best nominally stable in a surface/near surface oxidizing secondary environment, it should be expected that the survival of these minerals during distal transport from ore-bearing locations is not likely.

The approach that the OGS has taken is to evaluate regional base metal potential by using lake sediment as the preferred sampling media. The reasoning for doing this is that this technique takes advantage of the hydromorphic dispersion process, the effects of which largely depend on the pH and redox conditions in the secondary environment. However, in the Spider 3 survey area, hydromorphic dispersion would most likely be inhibited by the presence of shallow lakes that have formed on relatively thick sediments and/or peat. In addition to this, the calcareous nature of tills in the survey area will further inhibit hydromorphic dispersion. The combination of these factors makes the job of identifying prospective base metal targets quite difficult. However, it should be noted that the area is not lacking in greenstone belts and the recent discovery by DeBeers of a significant base metal occurrence (*The Northern Miner*, Nov. 18, 2002, p.1) in the survey area suggests that the region may have significant base metal potential.

The interpretation of the geochemistry data presented here is somewhat complicated by the fact that is difficult to reconcile the differences observed in the –80 mesh bulk sample and –60 mesh concentrates. While there is some agreement in the distribution of anomalous areas, there are also notable differences, particularly with Zn, which is more elevated in the –80 mesh bulk samples and exhibits easily identifiable anomalies in Areas 5, 8, 9, 10 and 12 that are either absent or not as prevalent in the –60 mesh concentrate data. It is possible that the adsorption of base metals on clay-sized particles (more prevalent in the –80 mesh samples) could account for these differences. It is also possible that the concentrations of Cu, Ni and Zn in the –60 mesh concentrates reflects a normal distribution of these elements in some of the denser phases such as mafic silicates and spinels and thereby may tell us more about provenance than of discrete zones of mineralization.

Nevertheless, there are some interesting aspects about the data that are worth noting. In particular, if we are to consider the –80 mesh bulk geochemistry data, there are numerous modern alluvium and till samples in the southwest part of the survey area (Area 4) that are either elevated or anomalous with respect to Ni, Cu and Zn. Glaciofluvial samples collected from eskers in Area 2 and Area 5 are also anomalous with respect to Ni and Cu in the –80 mesh bulk samples. There are also groups of contiguous modern alluvium samples from the –80 mesh bulk component that are anomalous for Cu in Area 16 and for Ni in Area 14. There are also many individual sample sites including numerous till samples that are anomalous with respect to base metals and should not be overlooked. It is suggested here that the information provided in Table 1, Figure 15 and Appendix F should be utilized to help delineate additional important areas.

Gold

Although the distribution of Au anomalies is somewhat erratic, the concentrations observed in some of the tills and modern alluvium samples from the –80 mesh bulk samples are quite impressive. Some examples include, till samples 96P222 (Area 4, 89 ppb) and 96P251 (Area 2, 28 ppb) as well as modern alluvium samples 96P241 (Area 2, 61 ppb), 96P081 (Area 11, 41 ppb) and 96P084 (Area 11, 661 ppb). The –60 mesh concentrates display higher Au concentrations, although agreement between anomalous samples in the 2 data sets is poor. The most likely cause of this disparity is the nugget effect. Relatively simple calculations demonstrate that the inclusion of a single Au grain with a diameter of 100 µm or less in a 20 g sub-sample used for INAA analysis can produce the entire range of concentrations observed in the –80 mesh bulk geochemistry samples.

The tabulated results show that there are numerous areas where multi-sample site anomalies occur. If we are to consider both data sets, then it would appear that Area 2, located on the upper reaches of the Attawapiskat River, and Area 11, located on the Ekwan River, exhibit multi-site anomalies in both data sets for modern alluvium and till and would be prime candidates for a follow-up investigation. There are many other areas shown in Table 1 that also have multi-site Au anomalies and should not be overlooked. Area 14, located on the southern tributaries of the Winiskisis Channel, produced the most anomalous Au value from the –60 mesh concentrates (sample 96R055, 5470 ppb Au). Two till samples collected close together in Area 4 are highly anomalous for gold although in different sample fractions. These include till 96P222 (mentioned above) and till 96P217 that contained 3620 ppb Au in the –60 mesh concentrate. The occurrence of multi-element anomalies in both sample fractions from numerous till samples collected in Area 4 suggests that this area should also be considered of interest.

Most of the Au anomalies observed in the central and northern parts of the survey area appear to be associated with the greenstone belts. It is suggested here that the Spider 3 survey area may be a favorable region to carry out gold exploration and the data supplied could be used as a starting point for evaluating areas of interest.

Rare Earth Elements, Thorium and Uranium

There are 2 areas that display multi-sample site anomalies for REE, Th and U in the –60 mesh tabled concentrates. Both locations are situated on the Winiskisis Channel (Areas 17 and 18). The elevated concentrations in the –60 mesh tabled concentrates can be attributed to the enrichment of REE phases in this fraction. It is interesting to note that both sample sites are also anomalous for Mn, Ti and Fe in the tabled concentrates as well as for magnetite content. The coexistence of anomalous Mn and rare elements in the same samples would appear to indicate that the source may be pegmatitic. High-quality B, Be and Nb data would certainly be desirable if this is to be confirmed. Additional heavy mineral sampling with careful picking of the concentrates may also reveal more about the nature of phases from which these elements are derived.

Areas 1, 2 and 5 also display lower, yet anomalous, concentrations of REEs, Th and Mn. There are also a few examples of single sites that are anomalous with respect to REEs, Th and Mn that should probably not be overlooked and these include Areas 11 and 19.

Strontium and Phosphorus

One of the most intense anomalies observed in the survey area is a concurrent Sr–P–Sc anomaly that occurs in Area 4 in the general vicinity of Goods and Scoter lakes. This area marks the upper reaches of a number of small tributaries that feed into the Muketei River. The geology of the area is mapped as quartz diorite, which is believed by Thurston et al. (1979) to represent a mafic phase of the granitic rocks in this area. What is important is that both modern alluvium and till samples are anomalous for Sr, P and Sc in both the –80 mesh bulk sample and –60 mesh concentrates. In addition, Y is anomalous in the –80 mesh bulk samples. Noteworthy till samples in this area include 96P217 (–60 mesh) and 96P222 (–80 mesh), which are both highly anomalous for Au. Till 96P216 (–60 mesh) is anomalous for both Cu and Zn. Till 96P214 (–60 mesh) produced the highest Cu anomaly (89ppm) for the survey. There are also numerous modern alluvium samples with elevated through to anomalous Cu values in this area. Of these, sample 96R205 (–80 mesh) is anomalous for both Cu and Ni.

It is also interesting to note that Ca and Al are anomalous in many of the –60 mesh modern alluvium and till samples collected in this area. The coexistence of Ca, P and Sr in the –60 mesh fractions would seem to suggest that apatite is abundant in the concentrates. However, the source of the apatite is unclear. The lack of elevated Ca in the –80 mesh bulk sample data, together with generally low magnetite contents in these samples, would appear to suggest that a carbonatite host for this anomaly is unlikely.

The fact that this anomaly is a multi-element variety that includes Au and base metals with representation in both alluvium and till samples is reason enough to recommend this area for a follow-up investigation.

Future Evaluation of the Platinum Group Element Potential of the Area

The presence of an intense Cr anomaly in Areas 2 and 5 suggests that it may be worthwhile to carry out follow-up investigations in these locations for PGEs. The focus of such a survey should be around the large mafic complex located just to the west of Area 2 that includes a rigorous sampling program utilizing both till (if available) and modern alluvium.

Samples collected on the Attawapiskat River, as part of the OTH James Bay Lowland indicator mineral survey (Dyer and Crabtree 2001), overlap many of the anomalous sites identified for Area 2. Approximately 40 samples collected in this vicinity have been identified and will be processed for PGE analysis. The results will be published as part of a forthcoming data release associated with the OTH project.

Summary and Recommendations

This regional heavy mineral–geochemical survey has been successful in defining certain target areas containing kimberlite indicator minerals that warrant additional work. The survey is regional in nature and as such does not accurately pinpoint specific locations for follow-up studies. It is suggested here that this information be used to augment the geophysical dataset (OGS 2003) that has been released for the Spider 3 survey area. These geophysical data were purchased as part of the OTH initiative and contain coverage of the Spider 3 survey area as well as extensive coverage to the east of the survey area. The Spider 3 component of the geophysical survey is composed of total magnetic field and 2^nd^ derivative vertical gradient maps flown at a flight spacing of 400 m. These surveys are of better resolution than those published previously (ODM–GSC 1963, 1969a, 1969b, 1969c) and, as such, should be of great help in delineating the most prospective areas for follow-up investigations.

Even though the indicator mineral counts for the modern alluvium samples are low, for example, when compared to surveys carried out in the vicinity of or down-ice from known kimberlite occurrences, such as the New Liskeard area (Allen 2001; Reid 2002) the survey area should not be overlooked. Some of these differences can be accounted for by different sample processing and indicator mineral picking procedures as well as secondary environment processes that are not entirely similar. It is also important to realize that while the classical KIM suite of minerals is designed to prospect for archetypal type I kimberlites that are typically enriched in mantle xenoliths, it is quite possible that other types of ultramafic diatremes that have sampled the diamond stability field, yet have low xenolith populations and therefore weak indicator mineral signatures, may be represented in the survey area. The Kyle Lake occurrence, as well as examples of diamond-bearing Proterozoic melnoite dikes and Archean breccias from the Wawa area, are proof that this is possible.

There are many areas that are anomalous with respect to base metals that have been identified here. It is difficult to promote one area in particular since the distribution of anomalies throughout the survey area and between the different sample fractions is complex. In light of the recent base metal discovery in the survey area, it is recommended that the data presented here should be used as a starting point for identifying areas that may have good potential. The geochemistry data illustrate that there are many areas associated with the metavolcanic belts that may be good locations to prospect for Au. More detailed till sampling programs carried out in the vicinity of some of the areas of greatest exploration potential highlighted in this report would be required to better evaluate the potential for these areas to host Au. There are also a number of areas of concurrent REE, Th, U anomalies that appear to be associated with Mn anomalies in the –60 mesh heavy concentrates. Although it would appear that these occurrences may be related to rare-element pegmatites, confirmation would require a follow-up investigation. The presence of an intense Sr and P anomaly in the Goods Lake area is interesting. This area is also characterized by multi-element anomalies in some samples of both modern alluvium and till, particularly in the –80 bulk sample geochemistry data. The lack of a significant geophysical expression, together with a low magnetic mineral component, suggests that this occurrence is probably not associated with an alkaline intrusive episode such as carbonatite, however, further investigation of this area is certainly warranted.

Finally, the occurrence of a significant Cr anomaly in the southern part of the study area suggests that the region in and around the mafic complex located between the upper reaches of the Muketei River tributaries and the Attawapiskat River should be prospected for PGEs.

References

Allen, J.L. 2001. Regional modern alluvium sampling survey of the Temagami–Marten river area, northeastern Ontario; Ontario Geological Survey, Open File Report 6043, 194p.

Barnett, P.J., Henry, A.P. and Babuin, D. 1991. Quaternary geology of Ontario, northern sheet; Ontario Geological Survey, Map 2553, scale 1:1 000 000.

Bostock, H.H. 1962. Lansdowne House (NTS 43D), Ontario; Geological Survey of Canada, Map 4-1962, scale 1:253 440.

Bostock, H.S. 1970. Physiographic subdivisions of Canada; *in* Geology and economic minerals of Canada, Geological Survey of Canada, Economic Geology Report No. 1, 5th edition, p.9-30.

Crabtree, D.C. and Gleeson, C.F. 2003. Indicator mineral and geochemistry data release, Spider 3 regional survey upper Attawapiskat and Ekwan rivers, northern Ontario; Ontario Geological Survey, Miscellaneous Release—Data 109.

Duffell, S., MacLaren, A.S. and Holman, R.H.C. 1963. Red Lake–Lansdowne House area, northwestern Ontario, Geological Survey of Canada, Paper 63-5, 15p.

Dyer, R. and Crabtree, D. 2001. OTH James Bay Lowland indicator mineral survey; *in* Summary of Field Work and Other Activities 2001, Ontario Geological Survey, Open File Report 6070, p.45-1 to 45-3.

Fipke, C.E., Gurney, J.J. and Moore, R.O. 1995. Diamond exploration techniques emphasizing indicator mineral geochemistry and Canadian examples; Geological Survey of Canada, Bulletin 423, 86p.

Gurney, J.J. 1984. A correlation between garnets and diamonds in kimberlite; *in* Kimberlite occurrence and origin: A basis for conceptual models in exploration; University of Western Australia, Perth, Western Australia, Publication No. 8, p.143-166.

Kong, J.M., Boucher, D.R. and Scott-Smith, B.H. 1999. Exploration and geology of the Attawapiskat kimberlites, James Bay Lowlands, northern Ontario, Canada; *in* Proceedings, Seventh International Kimberlite Conference, Cape Town, South Africa, p.452-467.

McMartin, I. and McClenaghan, M.B., 2001. Till geochemistry and sampling techniques in glaciated terrain: a review; *in* Drift exploration in glaciated terrain, Geological Society, Special Publication No. 185, p.19-43.

Mitchell, R.H. 1986. Kimberlites, mineralogy, geochemistry, and petrology; Plenum Press, New York, 442p.

Morris, T.F., Sage, R.P., Crabtree, D.C. and Pitre, S.A. 2000. Kimberlite, base metal, gold and carbonatite exploration targets, derived from overburden heavy mineral data, Killala Lake area, northwestern Ontario; Ontario Geological Survey, Open File Report 6013, 114p.

Ontario Department of Mines–Geological Survey of Canada 1963. Aeromagnetics, Landsdowne House; Ontario Department of Mines–Geological Survey of Canada, Map 7015G, scale 1:253 440.

——— 1969a. Aeromagnetics, Missisa Lake; Ontario Department of Mines–Geological Survey of Canada, Map 7265G, scale 1:253 440.

——— 1969b. Aeromagnetics, Matateto River; Ontario Department of Mines–Geological Survey of Canada, Map 7269G, scale 1:253 440.

——— 1969c. Aeromagnetics, Winiskisis Channel; Ontario Department of Mines–Geological Survey of Canada, Map 7270G, scale 1:253 440.

Ontario Geological Survey 1991. Bedrock geology of Ontario, northern sheet; Ontario Geological Survey, Map 2541, scale 1:1 000 000.

——— 2001a. Results of modern alluvium sampling, Kapuskasing–Fraserdale area, northeastern Ontario: Operation Treasure Hunt – Kapuskasing Structural Zone; Ontario Geological Survey, Open File Report 6044, 146p.

——— 2001b. Results of modern alluvium sampling, Chapleau area, northeastern Ontario: Operation Treasure Hunt – Kapuskasing Structural Zone; Ontario Geological Survey, Open File Report 6063, 164p.

——— 2001c. Results of modern alluvium sampling, Foleyet area, northeastern Ontario: Operation Treasure Hunt – Kapuskasing Structural Zone; Ontario Geological Survey, Open File Report 6065, 144p.

——— 2001d. Results of modern alluvium sampling, Coral Rapids, northeastern Ontario: Operation Treasure Hunt – Kapuskasing Structural Zone; Ontario Geological Survey, Open File Report 6068, 117p.

——— 2003. Ontario airborne geophysical surveys, magnetic data, Attawapiskat area; Ontario Geological Survey, Geophysical Data Set 1211.

Prest, V.K. 1963. Red Lake–Lansdowne area, northwestern Ontario: surficial geology; Geological Survey of Canada, Paper 63-6, 23p.

Reid, J.L. 2002. Regional modern alluvium sampling survey of the Mattawa–Cobalt corridor, northeastern Ontario; Ontario Geological Survey, Open File Report 6088, 235p.

Sage, R.P. 2000. Kimberlites of the Attawapiskat area, James Bay Lowlands, northern Ontario; Ontario Geological Survey, Open File Report 6019, 341p.

Shilts, W.W. and Kettles, I.M. 1990. Geochemical–mineralogical profiles through fresh and weathered till; *in* Glacial indicator tracing, Balkema, Rotterdam, p.187-216.

Thorliefson, L.H., Wyatt, P.H. and Shilts, W.W. 1992. Hudson Bay Lowland Quaternary stratigraphy: evidence for early Wisconsinan glaciation centered in Quebec; *in* The last interglacial–glacial transition in North America, Geological Society of America, Special Paper 270, p.207-221.

Thurston, P.C., Sage, R.P. and Siragusa, G.M. 1979. Geology of the Winisk Lake area, District of Kenora, Patricia Portion; Ontario Geological Survey, Report 193, 169p.

Appendix A

Sample Locations by UTM and Geographic Coordinates

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96P001	Alluvium	16	503841	5983955	503841	5984171	-86.94139	54.00582	-86	56	29	54	0	21
96P002	Alluvium	16	505830	5980218	505830	5980434	-86.91112	53.97222	-86	54	40	53	58	20
96P003	Alluvium	16	507943	5977810	507943	5978026	-86.87897	53.95054	-86	52	44	53	57	2
96P004	Alluvium	16	508977	5973578	508977	5973795	-86.86334	53.91250	-86	51	48	53	54	45
96P005	Alluvium	16	510281	5969996	510281	5970213	-86.84361	53.88028	-86	50	37	53	52	49
96P006	Alluvium	16	510507	5966566	510507	5966783	-86.84028	53.84945	-86	50	25	53	50	58
96P007	Alluvium	16	510986	5964466	510986	5964683	-86.83308	53.83056	-86	49	59	53	49	50
96P008	Alluvium	16	514085	5961909	514085	5962126	-86.78611	53.80750	-86	47	10	53	48	27
96P009	Alluvium	16	516545	5959383	516544	5959600	-86.74890	53.78473	-86	44	56	53	47	5
96P010	Alluvium	16	518968	5957723	518967	5957940	-86.71223	53.76972	-86	42	44	53	46	11
96P011	Alluvium	16	520148	5955874	520147	5956091	-86.69445	53.75306	-86	41	40	53	45	11
96P012	Alluvium	16	522013	5952575	522012	5952792	-86.66640	53.72333	-86	39	59	53	43	24
96P013	Alluvium	16	522480	5950909	522479	5951126	-86.65944	53.70834	-86	39	34	53	42	30
96P014	Alluvium	16	522183	5947786	522182	5948003	-86.66417	53.68028	-86	39	51	53	40	49
96P015	Alluvium	16	522359	5945345	522358	5945562	-86.66168	53.65833	-86	39	42	53	39	30
96P016	Alluvium	16	519980	5943604	519979	5943821	-86.69779	53.64278	-86	41	52	53	38	34
96P017	Alluvium	16	517323	5941986	517322	5942203	-86.73807	53.62833	-86	44	17	53	37	42
96P018	Alluvium	16	515715	5939601	515714	5939818	-86.76250	53.60695	-86	45	45	53	36	25
96P019	Alluvium	16	514220	5935424	514220	5935641	-86.78527	53.56944	-86	47	7	53	34	10
96P020	Alluvium	16	511594	5933532	511594	5933749	-86.82500	53.55250	-86	49	30	53	33	9
96P021	Alluvium	16	542294	5927124	542293	5927341	-86.36251	53.49333	-86	21	45	53	29	36
96P022	Alluvium	16	536963	5925410	536962	5925627	-86.44306	53.47833	-86	26	35	53	28	42
96P023	Alluvium	16	533015	5923156	533014	5923373	-86.50278	53.45833	-86	30	10	53	27	30
96P024	Alluvium	16	527155	5919008	527154	5919225	-86.59139	53.42138	-86	35	29	53	25	17
96P025	Alluvium	16	524889	5916215	524888	5916432	-86.62571	53.39639	-86	37	33	53	23	47
96P026	Alluvium	16	521715	5913634	521714	5913851	-86.67362	53.37333	-86	40	25	53	22	24
96P027	Alluvium	16	521681	5904950	521680	5905167	-86.67473	53.29527	-86	40	29	53	17	43
96P028	Alluvium	16	520876	5898426	520875	5898643	-86.68723	53.23666	-86	41	14	53	14	12
96P029	Alluvium	16	518544	5897459	518543	5897676	-86.72223	53.22805	-86	43	20	53	13	41
96P030	Alluvium	16	506568	5894615	506568	5894832	-86.90167	53.20277	-86	54	6	53	12	10
96P031	Alluvium	16	505869	5889639	505869	5889856	-86.91223	53.15805	-86	54	44	53	9	29
96P032	Alluvium	16	505727	5884478	505727	5884695	-86.91444	53.11166	-86	54	52	53	6	42
96P033	Alluvium	16	501550	5988700	501550	5988916	-86.97633	54.04848	-86	58	35	54	2	55
96P034	Alluvium	16	500280	5999250	500280	5999466	-86.99571	54.14330	-86	59	45	54	8	36
96P035	Alluvium	16	506600	5998350	506600	5998566	-86.89899	54.13517	-86	53	56	54	8	7
96P036	Alluvium	16	512500	5995500	512500	5995716	-86.80880	54.10945	-86	48	32	54	6	34
96P037	Alluvium	16	517300	5992700	517299	5992916	-86.73556	54.08414	-86	44	8	54	5	3
96P038	Alluvium	16	565525	5970700	565523	5970917	-86.00319	53.88257	-86	0	11	53	52	57
96P039	Alluvium	16	561575	5969500	561573	5969717	-86.06352	53.87227	-86	3	49	53	52	20
96P040	Alluvium	16	558020	5967300	558018	5967517	-86.11799	53.85291	-86	7	5	53	51	10
96P041	Alluvium	16	557020	5964200	557018	5964417	-86.13377	53.82516	-86	8	2	53	49	31
96P042	Alluvium	16	552736	5963850	552734	5964067	-86.19891	53.82247	-86	11	56	53	49	21
96P043	Alluvium	16	554600	5961620	554598	5961837	-86.17099	53.80223	-86	10	16	53	48	8
96P044	Alluvium	16	551525	5962600	551523	5962817	-86.21751	53.81135	-86	13	3	53	48	41
96P045	Alluvium	16	547125	5960230	547123	5960447	-86.28469	53.79047	-86	17	5	53	47	26
96P046	Alluvium	16	560200	5929560	560198	5929777	-86.09218	53.51348	-86	5	32	53	30	49
96P047	Alluvium	16	558100	5924300	558098	5924517	-86.12482	53.46644	-86	7	29	53	27	59
96P048	Alluvium	16	556850	5918975	556848	5919192	-86.14461	53.41872	-86	8	41	53	25	7
96P049	Alluvium	16	543166	5961700	543164	5961917	-86.34458	53.80403	-86	20	40	53	48	15
96P050	Alluvium	16	536760	5966480	536759	5966697	-86.44126	53.84748	-86	26	29	53	50	51
96P051	Alluvium	16	536350	5963200	536349	5963417	-86.44788	53.81803	-86	26	52	53	49	5
96P052	Alluvium	16	536800	5958850	536799	5959067	-86.44156	53.77890	-86	26	30	53	46	44
96P053	Alluvium	16	536618	5954320	536617	5954537	-86.44486	53.73820	-86	26	41	53	44	18
96P054	Alluvium	16	536200	5951600	536199	5951817	-86.45151	53.71378	-86	27	5	53	42	50
96P055	Alluvium	16	544147	5928650	544145	5928867	-86.33438	53.50690	-86	20	4	53	30	25
96P056	Alluvium	16	540800	5925100	540799	5925317	-86.38529	53.47526	-86	23	7	53	28	31
96P057	Alluvium	16	535032	5920942	535031	5921159	-86.47265	53.43830	-86	28	22	53	26	18
96P058	Alluvium	16	530700	5918200	530699	5918417	-86.53813	53.41392	-86	32	17	53	24	50
96P059	Alluvium	16	526939	5914750	526938	5914967	-86.59501	53.38312	-86	35	42	53	22	59
96P060	Alluvium	16	510871	5931395	510871	5931612	-86.83598	53.53331	-86	50	10	53	31	60
96P061	Alluvium	16	510819	5931441	510819	5931658	-86.83677	53.53372	-86	50	12	53	32	1
96P062	Alluvium	16	509379	5921011	509379	5921228	-86.85881	53.44000	-86	51	32	53	26	24
96P063	Alluvium	16	509755	5915395	509755	5915612	-86.85332	53.38951	-86	51	12	53	23	22
96P064	Alluvium	16	499826	5903011	499826	5903228	-87.00261	53.27828	-87	0	9	53	16	42
96P065	Alluvium	16	501700	5909550	501700	5909767	-86.97447	53.33706	-86	58	28	53	20	13
96P066	Alluvium	16	502625	5902375	502625	5902592	-86.96064	53.27256	-86	57	38	53	16	21
96P067	Alluvium	16	503405	5987275	503405	5987491	-86.94801	54.03566	-86	56	53	54	2	8
96P068	Alluvium	16	520900	5956750	520899	5956967	-86.68299	53.76090	-86	40	59	53	45	39
96P069	Alluvium	16	525500	5911050	525499	5911267	-86.61694	53.34993	-86	37	1	53	20	60
96P070	Alluvium	16	540500	5923400	540499	5923617	-86.39003	53.46000	-86	23	24	53	27	36
96P071	Alluvium	16	538820	5921860	538819	5922077	-86.41552	53.44629	-86	24	56	53	26	47
96P072	Alluvium	16	536400	5919550	536399	5919767	-86.45222	53.42569	-86	27	8	53	25	32
96P073	Alluvium	16	534380	5917000	534379	5917217	-86.48290	53.40291	-86	28	58	53	24	10
96P074	Alluvium	16	532000	5907430	531999	5907647	-86.51966	53.31704	-86	31	11	53	19	1

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96P075	Till	16	537200	5910200	537199	5910417	-86.44128	53.34160	-86	26	29	53	20	30
96P076	Till	16	533231	5901952	533230	5902169	-86.50176	53.26772	-86	30	6	53	16	4
96P077	Alluvium	16	524975	5909650	524974	5909867	-86.62494	53.33737	-86	37	30	53	20	15
96P078	Alluvium	16	539175	5918160	539174	5918377	-86.41063	53.41300	-86	24	38	53	24	47
96P079	Alluvium	16	541100	5923040	541099	5923257	-86.38104	53.45672	-86	22	52	53	27	24
96P080	Alluvium	16	554725	5927100	554723	5927317	-86.17517	53.49197	-86	10	31	53	29	31
96P081	Alluvium	16	555100	5912100	555098	5912317	-86.17214	53.35711	-86	10	20	53	21	26
96P082	Alluvium	16	553900	5907408	553898	5907625	-86.19097	53.31506	-86	11	27	53	18	54
96P083	Alluvium	16	543100	5893000	543099	5893217	-86.35500	53.18655	-86	21	18	53	11	12
96P084	Alluvium	16	551475	5895775	551473	5895992	-86.22924	53.21075	-86	13	45	53	12	39
96P085	Alluvium	16	550400	5893900	550398	5894117	-86.24564	53.19400	-86	14	44	53	11	38
96P086	Alluvium	16	503700	5957950	503700	5958167	-86.94386	53.77210	-86	56	38	53	46	20
96P087	Alluvium	16	499354	5961033	499354	5961250	-87.00981	53.79982	-87	0	35	53	47	59
96P088	Alluvium	16	505520	5956400	505520	5956617	-86.91627	53.75815	-86	54	59	53	45	29
96P089	Alluvium	16	507325	5953600	507325	5953817	-86.88896	53.73296	-86	53	20	53	43	59
96P090	Alluvium	16	503548	5957244	503548	5957461	-86.94617	53.76575	-86	56	46	53	45	57
96P091	Alluvium	16	504600	5957750	504600	5957967	-86.93021	53.77029	-86	55	49	53	46	13
96P092	Alluvium	16	552450	5902073	552448	5802291	-86.22967	52.36838	-86	13	47	52	22	6
96P093	Alluvium	16	507500	5947800	507500	5948017	-86.88645	53.68082	-86	53	11	53	40	51
96P094	Alluvium	16	505200	5944000	505200	5944217	-86.92134	53.64670	-86	55	17	53	38	48
96P095	Alluvium	16	506325	5940100	506325	5940317	-86.90440	53.61163	-86	54	16	53	36	42
96P096	Alluvium	16	499492	5935604	499492	5935821	-87.00767	53.57125	-87	0	28	53	34	17
96P097	Alluvium	16	502675	5932400	502675	5932617	-86.95963	53.54245	-86	57	35	53	32	33
96P098	Alluvium	16	509050	5925400	509050	5925617	-86.86363	53.47946	-86	51	49	53	28	46
96P099	Alluvium	16	538900	5894200	538899	5894417	-86.41771	53.19766	-86	25	4	53	11	52
96P100	Alluvium	16	535100	5893200	535099	5893417	-86.47470	53.18893	-86	28	29	53	11	20
96P101	Alluvium	16	531900	5890750	531899	5890967	-86.52283	53.16711	-86	31	22	53	10	2
96P102	Alluvium	16	531625	5886975	531624	5887192	-86.52732	53.13320	-86	31	38	53	7	60
96P103	Alluvium	16	527870	5885300	527869	5885517	-86.58359	53.11835	-86	35	1	53	7	6
96P104	Alluvium	16	525170	5885025	525169	5885242	-86.62395	53.11601	-86	37	26	53	6	58
96P105	Alluvium	16	528100	5883900	528099	5884117	-86.58027	53.10575	-86	34	49	53	6	21
96P106	Alluvium	16	527800	5878500	527799	5878717	-86.58522	53.05723	-86	35	7	53	3	26
96P107	Alluvium	16	527050	5875100	527049	5875317	-86.59670	53.02670	-86	35	48	53	1	36
96P108	Alluvium	16	526625	5869600	526624	5869817	-86.60349	52.97728	-86	36	13	52	58	38
96P109	Alluvium	16	524500	5863175	524499	5863392	-86.63562	52.91963	-86	38	8	52	55	11
96P110	Alluvium	16	552500	5897300	552498	5897517	-86.21365	53.22435	-86	12	49	53	13	28
96P111	Till	16	552250	5895700	552248	5895917	-86.21765	53.21000	-86	13	4	53	12	36
96P112	Alluvium	16	550300	5891218	550298	5891435	-86.24756	53.16990	-86	14	51	53	10	12
96P113	Alluvium	16	548750	5889650	548748	5889867	-86.27098	53.15595	-86	16	16	53	9	21
96P114	Alluvium	16	547325	5885150	547323	5885367	-86.29295	53.11563	-86	17	35	53	6	56
96P115	Alluvium	16	547800	5881750	547798	5881967	-86.28636	53.08503	-86	17	11	53	5	6
96P116	Alluvium	16	548575	5877500	548573	5877717	-86.27543	53.04675	-86	16	32	53	2	48
96P117	Alluvium	16	549900	5874100	549898	5874317	-86.25620	53.01607	-86	15	22	53	0	58
96P118	Alluvium	16	546425	5868552	546423	5868769	-86.30879	52.96651	-86	18	32	52	57	59
96P119	Alluvium	16	546425	5868300	546423	5868517	-86.30883	52.96425	-86	18	32	52	57	51
96P120	Alluvium	16	542900	5869125	542899	5869342	-86.36118	52.97196	-86	21	40	52	58	19
96P121	Till	16	535425	5866525	535424	5866742	-86.47277	52.94913	-86	28	22	52	56	57
96P122	Alluvium	16	544900	5867960	544898	5868177	-86.33158	52.96132	-86	19	54	52	57	41
96P123	Alluvium	16	550212	5891887	550210	5892104	-86.24877	53.17592	-86	14	56	53	10	33
96P124	Alluvium	16	545930	5890600	545928	5890817	-86.31301	53.16474	-86	18	47	53	9	53
96P125	Alluvium	16	542515	5858675	542514	5858892	-86.36828	52.87805	-86	22	6	52	52	41
96P126	Alluvium	16	540443	5887171	540442	5887388	-86.39550	53.13436	-86	23	44	53	8	4
96P127	Alluvium	16	537013	5885321	537012	5885538	-86.44698	53.11798	-86	26	49	53	7	5
96P128	Alluvium	16	535106	5881991	535105	5882208	-86.47584	53.08818	-86	28	33	53	5	17
96P129	Alluvium	16	517146	5837005	517145	5837223	-86.74637	52.68466	-86	44	47	52	41	5
96P130	Alluvium	16	516524	5929194	516523	5929411	-86.75083	53.51338	-86	45	3	53	30	48
96P131	Alluvium	16	517212	5921798	517211	5922015	-86.74086	53.44688	-86	44	27	53	26	49
96P132	Alluvium	16	504693	5897097	504693	5897314	-86.92970	53.22510	-86	55	47	53	13	30
96P133	Alluvium	16	502206	5899299	502206	5899516	-86.96694	53.24491	-86	58	1	53	14	42
96P134	Alluvium	16	500096	5898513	500096	5898730	-86.99856	53.23785	-86	59	55	53	14	16
96P135	Alluvium	16	500310	5887370	500310	5887587	-86.99537	53.13768	-86	59	43	53	8	16
96P136	Alluvium	16	501590	5876150	501590	5876367	-86.97629	53.03682	-86	58	35	53	2	13
96P137	Glaciofluvial	16	508184	5865153	508184	5865370	-86.87823	52.93791	-86	52	42	52	56	16
96P138	Alluvium	16	504191	5873270	504191	5873487	-86.93753	53.01092	-86	56	15	53	0	39
96P139	Alluvium	16	504060	5869275	504060	5869492	-86.93954	52.97501	-86	56	22	52	58	30
96P140	Alluvium	16	503681	5863128	503681	5863345	-86.94525	52.91975	-86	56	43	52	55	11
96P141	Alluvium	16	501845	5857500	501845	5857717	-86.97259	52.86917	-86	58	21	52	52	9
96P142	Till	16	501293	5849873	501293	5850091	-86.98082	52.80061	-86	58	51	52	48	2
96P143	Till	16	508761	5883800	508761	5884017	-86.86913	53.10552	-86	52	9	53	6	20
96P144	Alluvium	16	510438	5883618	510438	5883835	-86.84409	53.10386	-86	50	39	53	6	14
96P145	Alluvium	16	512300	5894820	512300	5895037	-86.81585	53.20451	-86	48	57	53	12	16
96P146	Alluvium	16	512823	5885776	512823	5885993	-86.80838	53.12320	-86	48	30	53	7	24
96P147	Alluvium	16	512345	5881631	512345	5881848	-86.81568	53.08595	-86	48	56	53	5	9
96P148	Till	16	514300	5864030	514300	5864247	-86.78727	52.92768	-86	47	14	52	55	40

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96P149	Alluvium	16	515275	5879525	515274	5879742	-86.77205	53.06695	-86	46	19	53	4	1
96P150	Till	16	514125	5889975	514125	5890192	-86.78874	53.16091	-86	47	19	53	9	39
96P151	Alluvium	16	531700	5880575	531699	5880792	-86.52683	53.07566	-86	31	37	53	4	32
96P152	Alluvium	16	530860	5878325	530859	5878542	-86.53958	53.05549	-86	32	22	53	3	20
96P153	Alluvium	16	530825	5878400	530824	5878617	-86.54010	53.05616	-86	32	24	53	3	22
96P154	Alluvium	16	529700	5875150	529699	5875367	-86.55718	53.02701	-86	33	26	53	1	37
96P155	Alluvium	16	530360	5872020	530359	5872237	-86.54764	52.99884	-86	32	52	52	59	56
96P156	Alluvium	16	530830	5867830	530829	5868047	-86.54103	52.96115	-86	32	28	52	57	40
96P157	Alluvium	16	529300	5862300	529299	5862517	-86.56431	52.91152	-86	33	52	52	54	41
96P158	Alluvium	16	530630	5857020	530629	5857237	-86.54503	52.86398	-86	32	42	52	51	50
96P159	Alluvium	16	526000	5856130	525999	5856347	-86.61387	52.85623	-86	36	50	52	51	22
96P160	Alluvium	16	522760	5853200	522759	5853418	-86.66220	52.83004	-86	39	44	52	49	48
96P161	Alluvium	16	522780	5853075	522779	5853293	-86.66191	52.82892	-86	39	43	52	49	44
96P162	Alluvium	16	520700	5854160	520699	5854378	-86.69271	52.83876	-86	41	34	52	50	20
96P163	Alluvium	16	516875	5854080	516874	5854298	-86.74950	52.83817	-86	44	58	52	50	17
96P164	Alluvium	16	515920	5848550	515919	5848768	-86.76395	52.78849	-86	45	50	52	47	19
96P165	Alluvium	16	514050	5840725	514050	5840943	-86.79200	52.71819	-86	47	31	52	43	5
96P166	Alluvium	16	516800	5837260	516799	5837478	-86.75147	52.68697	-86	45	5	52	41	13
96P167	Alluvium	16	515400	5830600	515399	5830818	-86.77250	52.62714	-86	46	21	52	37	38
96P168	Alluvium	16	513580	5824320	513580	5824538	-86.79963	52.57073	-86	47	59	52	34	15
96P169	Alluvium	16	512280	5837910	512280	5838128	-86.81830	52.69293	-86	49	6	52	41	35
96P170	Alluvium	16	510770	5832710	510770	5832928	-86.84082	52.64622	-86	50	27	52	38	46
96P171	Alluvium	16	507500	5829435	507500	5829653	-86.88922	52.61683	-86	53	21	52	37	1
96P172	Alluvium	16	515000	5854400	514999	5854618	-86.77732	52.84110	-86	46	38	52	50	28
96P173	Alluvium	16	512325	5850600	512325	5850818	-86.81716	52.80701	-86	49	2	52	48	25
96P174	Till	16	509710	5856600	509710	5856817	-86.85578	52.86099	-86	51	21	52	51	40
96P175	Alluvium	16	507775	5858430	507775	5858647	-86.88447	52.87747	-86	53	4	52	52	39
96P176	Alluvium	16	505250	5840675	505250	5840893	-86.92228	52.71790	-86	55	20	52	43	4
96P177	Alluvium	16	501320	5836010	501320	5836228	-86.98048	52.67599	-86	58	50	52	40	34
96P178	Alluvium	16	500275	5830100	500275	5830318	-86.99594	52.62286	-86	59	45	52	37	22
96P179	Alluvium	16	500070	5821775	500070	5821993	-86.99897	52.54802	-86	59	56	52	32	53
96P180	Alluvium	16	564150	5876800	564148	5877017	-86.04327	53.03882	-86	2	36	53	2	20
96P181	Alluvium	16	562500	5873125	562498	5873342	-86.06859	53.00598	-86	4	7	53	0	22
96P182	Alluvium	16	559525	5871100	559523	5871317	-86.11329	52.98812	-86	6	48	52	59	17
96P183	Alluvium	16	556050	5868250	556048	5868467	-86.16555	52.96288	-86	9	56	52	57	46
96P184	Alluvium	16	553100	5865300	553098	5865517	-86.20994	52.93666	-86	12	36	52	56	12
96P185	Alluvium	16	549325	5859750	549323	5859967	-86.26695	52.88714	-86	16	1	52	53	14
96P186	Alluvium	16	549550	5850750	549548	5850968	-86.26498	52.80622	-86	15	54	52	48	22
96P187	Alluvium	16	516700	5845450	516699	5845668	-86.75254	52.76060	-86	45	9	52	45	38
96P188	Alluvium	16	545180	5841625	545178	5841843	-86.33106	52.72458	-86	19	52	52	43	28
96P189	Alluvium	16	544310	5839000	544308	5839218	-86.34429	52.70106	-86	20	39	52	42	4
96P190	Alluvium	16	543925	5834900	543923	5835118	-86.35053	52.66423	-86	21	2	52	39	51
96P191	Alluvium	16	543800	5835000	543798	5835218	-86.35237	52.66514	-86	21	9	52	39	55
96P192	Alluvium	16	542010	5829300	542009	5829518	-86.37955	52.61404	-86	22	46	52	36	51
96P193	Alluvium	16	543010	5820500	543009	5820718	-86.36592	52.53486	-86	21	57	52	32	5
96P194	Alluvium	16	549730	5854300	549728	5854518	-86.26176	52.83812	-86	15	42	52	50	17
96P195	Alluvium	16	545344	5850530	545342	5850748	-86.32739	52.80462	-86	19	39	52	48	17
96P196	Alluvium	16	542450	5848960	542449	5849178	-86.37051	52.79074	-86	22	14	52	47	27
96P197	Alluvium	16	536960	5846730	536959	5846948	-86.45217	52.77110	-86	27	8	52	46	16
96P198	Alluvium	16	535120	5840150	535119	5840368	-86.48015	52.71207	-86	28	49	52	42	43
96P199	Alluvium	16	535100	5840160	535099	5840378	-86.48044	52.71216	-86	28	50	52	42	44
96P200	Alluvium	16	536575	5835350	536574	5835568	-86.45914	52.66882	-86	27	33	52	40	8
96P201	Alluvium	16	536525	5825200	536524	5825418	-86.46101	52.57758	-86	27	40	52	34	39
96P202	Alluvium	16	532760	5818300	532759	5818518	-86.51725	52.51579	-86	31	2	52	30	57
96P203	Till	16	526420	5813975	526419	5814193	-86.61102	52.47725	-86	36	40	52	28	38
96P204	Till	16	526700	5808150	526699	5808368	-86.60736	52.42487	-86	36	26	52	25	30
96P205	Alluvium	16	526780	5896400	526779	5896617	-86.59895	53.21818	-86	35	56	53	13	5
96P206	Till	16	515360	5800500	515359	5800718	-86.77448	52.35653	-86	46	28	52	21	24
96P207	Alluvium	16	535325	5849875	535324	5850093	-86.47607	52.79948	-86	28	34	52	47	58
96P208	Alluvium	16	524897	5847800	524896	5848018	-86.63089	52.78141	-86	37	51	52	46	53
96P209	Alluvium	16	528500	5847775	528499	5847993	-86.57748	52.78100	-86	34	39	52	46	52
96P210	Alluvium	16	529650	5842350	529649	5842568	-86.56092	52.73217	-86	33	39	52	43	56
96P211	Alluvium	16	524900	5840200	524899	5840418	-86.63142	52.71308	-86	37	53	52	42	47
96P212	Alluvium	16	522450	5838400	522449	5838618	-86.66781	52.69701	-86	40	4	52	41	49
96P213	Alluvium	16	522160	5829300	522159	5829518	-86.67271	52.61521	-86	40	22	52	36	55
96P214	Alluvium	16	522080	5826600	522079	5826818	-86.67408	52.59095	-86	40	27	52	35	27
96P215	Alluvium	16	522920	5823080	522919	5823298	-86.66192	52.55927	-86	39	43	52	33	33
96P216	Till	16	523300	5817650	523299	5817868	-86.65670	52.51043	-86	39	24	52	30	38
96P217	Till	16	522500	5812500	522499	5812718	-86.66883	52.46417	-86	40	8	52	27	51
96P218	Alluvium	16	520100	5837040	520099	5837258	-86.70267	52.68488	-86	42	10	52	41	6
96P219	Till	16	520425	5828780	520424	5828998	-86.69837	52.61061	-86	41	54	52	36	38
96P220	Alluvium	16	519170	5824675	519169	5824893	-86.71714	52.57375	-86	43	2	52	34	26
96P221	Till	16	517300	5823025	517299	5823243	-86.74482	52.55898	-86	44	41	52	33	32
96P222	Till	16	520900	5815400	520899	5815618	-86.69220	52.49030	-86	41	32	52	29	25

		Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
Sample Site #	Sample Material	UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96P223	Alluvium	16	519010	5814010	519009	5814228	-86.72011	52.47788	-86	43	12	52	28	40
96P224	Alluvium	16	518380	5810800	518379	5811018	-86.72957	52.44904	-86	43	46	52	26	57
96P225	Alluvium	16	581640	5871360	581637	5871577	-85.78387	52.98755	-85	47	2	52	59	15
96P226	Alluvium	16	577440	5867200	577437	5867417	-85.84741	52.95078	-85	50	51	52	57	3
96P227	Alluvium	16	577320	5867220	577317	5867437	-85.84919	52.95098	-85	50	57	52	57	4
96P228	Alluvium	16	577680	5864550	577677	5864767	-85.84448	52.92693	-85	50	40	52	55	37
96P229	Alluvium	16	564075	5866500	564073	5866717	-86.04643	52.94625	-86	2	47	52	56	47
96P230	Alluvium	16	576250	5857600	576247	5857817	-85.86738	52.86467	-85	52	3	52	51	53
96P231	Alluvium	16	573250	5850570	573247	5850788	-85.91351	52.80191	-85	54	49	52	48	7
96P232	Alluvium	16	573200	5850670	573197	5850888	-85.91423	52.80281	-85	54	51	52	48	10
96P233	Alluvium	16	574380	5843160	574377	5843378	-85.89843	52.73515	-85	53	54	52	44	7
96P234	Alluvium	16	574250	5843200	574247	5843418	-85.90035	52.73553	-85	54	1	52	44	8
96P235	Alluvium	16	571280	5838420	571278	5838638	-85.94535	52.69296	-85	56	43	52	41	35
96P236	Alluvium	16	571360	5838150	571358	5838368	-85.94422	52.69053	-85	56	39	52	41	26
96P237	Alluvium	16	569940	5831880	569938	5832098	-85.96656	52.63435	-85	57	60	52	38	4
96P238	Alluvium	16	566090	5826470	566088	5826688	-86.02452	52.58621	-86	1	28	52	35	10
96P239	Alluvium	16	565290	5820500	565288	5820718	-86.03750	52.53264	-86	2	15	52	31	58
96P240	Alluvium	16	565310	5820550	565308	5820768	-86.03720	52.53309	-86	2	14	52	31	59
96P241	Alluvium	16	566000	5813535	565998	5813753	-86.02842	52.46995	-86	1	42	52	28	12
96P242	Alluvium	16	573780	5852500	573777	5852718	-85.90521	52.81918	-85	54	19	52	49	9
96P243	Alluvium	16	563471	5809033	563469	5809251	-86.06650	52.42978	-86	3	59	52	25	47
96P244	Alluvium	16	561950	5807200	561948	5807418	-86.08921	52.41348	-86	5	21	52	24	49
96P245	Alluvium	16	561380	5806960	561378	5807178	-86.09763	52.41138	-86	5	51	52	24	41
96P246	Alluvium	16	560480	5806700	560478	5806918	-86.11091	52.40915	-86	6	39	52	24	33
96P247	Alluvium	16	558380	5807020	558378	5807238	-86.14172	52.41225	-86	8	30	52	24	44
96P248	Alluvium	16	558450	5807020	558448	5807238	-86.14069	52.41224	-86	8	26	52	24	44
96P249	Alluvium	16	556780	5806100	556778	5806318	-86.16540	52.40415	-86	9	55	52	24	15
96P250	Alluvium	16	556640	5806080	556638	5806298	-86.16746	52.40398	-86	10	3	52	24	14
96P251	Till	16	556990	5799960	556988	5800178	-86.16335	52.34893	-86	9	48	52	20	56
96P252	Alluvium	16	554000	5802225	553998	5802443	-86.20688	52.36960	-86	12	25	52	22	11
96P253	Alluvium	16	551150	5801130	551148	5801348	-86.24891	52.36003	-86	14	56	52	21	36
96P254	Alluvium	16	548525	5794800	548523	5795018	-86.28836	52.30336	-86	17	18	52	18	12
96P255	Alluvium	16	549400	5792425	549398	5792643	-86.27588	52.28193	-86	16	33	52	16	55
96P256	Alluvium	16	549575	5795230	549573	5795448	-86.27290	52.30713	-86	16	22	52	18	26
96P257	Alluvium	16	547670	5790470	547668	5790688	-86.30151	52.26451	-86	18	5	52	15	52
96P258	Till	16	539940	5793930	539939	5794148	-86.41435	52.29623	-86	24	52	52	17	46
96P259	Till	16	543335	5798310	543334	5798528	-86.36401	52.33535	-86	21	50	52	20	7
96P260	Alluvium	16	543125	5800850	543124	5801068	-86.36676	52.35820	-86	22	0	52	21	30
96P261	Alluvium	16	547940	5790850	547938	5791068	-86.29750	52.26790	-86	17	51	52	16	4
96P262	Alluvium	16	541200	5783960	514200	5784178	-86.79219	52.20786	-86	47	32	52	12	28
96P263	Alluvium	16	549410	5798825	549408	5799043	-86.27479	52.33946	-86	16	29	52	20	22
96P264	Alluvium	16	542740	5773525	542739	5773743	-86.37587	52.11258	-86	22	33	52	6	45
96P265	Alluvium	16	548825	5787075	548823	5787293	-86.28508	52.23389	-86	17	6	52	14	2
96P266	Alluvium	16	547680	5782960	547678	5783178	-86.30243	52.19699	-86	18	9	52	11	49
96P267	Till	16	550225	5779940	550223	5780158	-86.26564	52.16962	-86	15	56	52	10	11
96P268	Glaciofluvial	16	553850	5798900	553848	5799118	-86.20962	52.33972	-86	12	35	52	20	23
96P269	Glaciofluvial	16	555330	5806290	555328	5806508	-86.18668	52.40601	-86	11	12	52	24	22
96P270	Glaciofluvial	16	555475	5807450	555473	5807668	-86.18435	52.41642	-86	11	4	52	24	59
96P271	Glaciofluvial	16	555930	5807800	555928	5808018	-86.17761	52.41952	-86	10	39	52	25	10
96P272	Glaciofluvial	16	557700	5814600	557698	5814818	-86.15041	52.48046	-86	9	1	52	28	50
96P273	Glaciofluvial	16	562390	5808230	562388	5808448	-86.08255	52.42268	-86	4	57	52	25	22
96P274	Glaciofluvial	16	565470	5815650	565468	5815868	-86.03581	52.48902	-86	2	9	52	29	20
96P275	Glaciofluvial	16	539000	5791700	538999	5791918	-86.42839	52.27625	-86	25	42	52	16	35
96P276	Till	16	555180	5789875	555178	5790093	-86.19158	52.25846	-86	11	30	52	15	30
96P277	Till	16	555110	5789971	555108	5790189	-86.19259	52.25933	-86	11	33	52	15	34
96P278	Glaciofluvial	16	541060	5815775	541059	5815993	-86.39525	52.49253	-86	23	43	52	29	33
96P279	Glaciofluvial	16	542800	5825200	542799	5825418	-86.36841	52.57712	-86	22	6	52	34	38
96P280	Glaciofluvial	16	542750	5829530	542749	5829748	-86.36859	52.61605	-86	22	7	52	36	58
96P281	Glaciofluvial	16	546450	5832900	546448	5833118	-86.31348	52.64604	-86	18	49	52	38	46
96P282	Glaciofluvial	16	542875	5835350	542874	5835568	-86.36599	52.66836	-86	21	58	52	40	6
96P283	Till	16	542130	5839625	542129	5839843	-86.37645	52.70685	-86	22	35	52	42	25
96P284	Glaciofluvial	16	544220	5840550	544218	5840768	-86.34541	52.71500	-86	20	43	52	42	54
96P285	Glaciofluvial	16	547075	5846725	547073	5846943	-86.30227	52.77026	-86	18	8	52	46	13
96P286	Till	16	553200	5847300	553198	5847518	-86.21140	52.77486	-86	12	41	52	46	29
96P287	Till	16	558250	5830650	558248	5830868	-86.13949	52.62468	-86	8	22	52	37	29
96P288	Till	16	520130	5836000	520129	5836218	-86.70229	52.67553	-86	42	8	52	40	32
96P289	Alluvium	16	529293	5840008	529292	5840226	-86.56641	52.71114	-86	33	59	52	42	40
96P290	Till	16	498934	5837384	498934	5837602	-87.01577	52.68834	-87	0	57	52	41	18
96P291	Till	16	498990	5836160	498990	5836378	-87.01494	52.67734	-87	0	54	52	40	38
96P292	Till	16	513100	5826500	513100	5826718	-86.80662	52.59034	-86	48	24	52	35	25
96P293	Alluvium	16	572000	5879700	571998	5879917	-85.92557	53.06389	-85	55	32	53	3	50
96P294	Alluvium	16	576000	5882100	575997	5882317	-85.86533	53.08490	-85	51	55	53	5	6
96P295	Alluvium	16	578400	5885800	578397	5886017	-85.82861	53.11781	-85	49	43	53	7	4
96P296	Alluvium	16	578300	5885500	578297	5885717	-85.83017	53.11513	-85	49	49	53	6	54

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96P297	Alluvium	16	586300	5891350	586297	5891567	-85.70910	53.16647	-85	42	33	53	9	59
96P298	Alluvium	16	591386	5892910	591383	5893127	-85.63260	53.17964	-85	37	57	53	10	47
96P299	Alluvium	16	600020	5896634	600017	5896851	-85.50229	53.21155	-85	30	8	53	12	42
96P300	Alluvium	16	604947	5895380	604943	5895597	-85.42896	53.19933	-85	25	44	53	11	58
96P301	Alluvium	16	604947	5895388	604943	5895605	-85.42896	53.19940	-85	25	44	53	11	58
96P302	Alluvium	16	512250	5892230	512250	5892447	-86.81670	53.18123	-86	49	0	53	10	52
96P303	Alluvium	16	614700	5888750	614696	5888967	-85.28540	53.13775	-85	17	7	53	8	16
96P304	Alluvium	16	614654	5888150	614650	5888367	-85.28630	53.13236	-85	17	11	53	7	56
96P305	Alluvium	16	608075	5885961	608071	5886178	-85.38533	53.11407	-85	23	7	53	6	51
96P306	Alluvium	16	600340	5884700	600337	5884917	-85.50124	53.10425	-85	30	4	53	6	15
96P307	Alluvium	16	593250	5881500	593247	5881717	-85.60803	53.07678	-85	36	29	53	4	36
96P308	Alluvium	16	593450	5876150	593447	5876367	-85.60660	53.02866	-85	36	24	53	1	43
96P309	Alluvium	16	590750	5875600	590747	5875817	-85.64700	53.02419	-85	38	49	53	1	27
96P310	Alluvium	16	585300	5874400	585297	5874617	-85.72856	53.01430	-85	43	43	53	0	51
96P311	Till	16	546475	5884840	546473	5885057	-86.30570	53.11292	-86	18	21	53	6	47
96P312	Till	16	520900	5890040	520899	5890257	-86.68742	53.16128	-86	41	15	53	9	41
96P313	Till	16	525650	5889950	525649	5890167	-86.61639	53.16026	-86	36	59	53	9	37
96P314	Till	16	551850	5913550	551848	5913767	-86.22073	53.37047	-86	13	15	53	22	14
96P315	Till	16	555360	5915800	555358	5916017	-86.16758	53.39034	-86	10	3	53	23	25
96R001	Alluvium	16	565500	5932340	565498	5932557	-86.01169	53.53783	-86	0	42	53	32	16
96R002	Alluvium	16	563280	5932620	563278	5932837	-86.04512	53.54062	-86	2	42	53	32	26
96R003	Alluvium	16	563470	5932940	563468	5933157	-86.04219	53.54347	-86	2	32	53	32	36
96R004	Alluvium	16	560980	5933610	560978	5933827	-86.07963	53.54979	-86	4	47	53	32	59
96R005	Alluvium	16	558450	5933160	558448	5933377	-86.11790	53.54603	-86	7	4	53	32	46
96R006	Alluvium	16	555390	5932380	555388	5932597	-86.16421	53.53936	-86	9	51	53	32	22
96R007	Alluvium	16	552520	5934410	552518	5934627	-86.20717	53.55790	-86	12	26	53	33	28
96R008	Alluvium	16	550080	5934280	550078	5934497	-86.24403	53.55697	-86	14	39	53	33	25
96R009	Alluvium	16	548090	5932030	548088	5932247	-86.27441	53.53693	-86	16	28	53	32	13
96R010	Alluvium	16	545720	5929820	545718	5930037	-86.31049	53.51728	-86	18	38	53	31	2
96R011	Alluvium	16	543950	5928870	543948	5929087	-86.33732	53.50889	-86	20	14	53	30	32
96R012	Alluvium	16	539720	5925710	539719	5925927	-86.40148	53.48082	-86	24	5	53	28	51
96R013	Alluvium	16	535290	5924920	535289	5925137	-86.46832	53.47404	-86	28	6	53	28	27
96R014	Alluvium	16	531250	5921930	531249	5922147	-86.52948	53.44742	-86	31	46	53	26	51
96R015	Alluvium	16	529290	5921080	529289	5921297	-86.55907	53.43989	-86	33	33	53	26	24
96R016	Alluvium	16	525640	5918080	525639	5918297	-86.61426	53.41311	-86	36	51	53	24	47
96R017	Alluvium	16	522510	5915790	522509	5916007	-86.66152	53.39267	-86	39	41	53	23	34
96R018	Alluvium	16	521350	5906640	521349	5906857	-86.67958	53.31047	-86	40	46	53	18	38
96R019	Alluvium	16	521450	5912980	521449	5913197	-86.67765	53.36746	-86	40	40	53	22	3
96R020	Alluvium	16	519490	5897380	519489	5897597	-86.70806	53.22731	-86	42	29	53	13	38
96R021	Alluvium	16	506090	5896880	506090	5897097	-86.90878	53.22314	-86	54	32	53	13	23
96R022	Alluvium	16	506560	5891710	506560	5891927	-86.90185	53.17666	-86	54	7	53	10	36
96R023	Alluvium	16	505750	5886960	505750	5887177	-86.91405	53.13397	-86	54	51	53	8	2
96R024	Alluvium	16	503170	5986130	503170	5986346	-86.95161	54.02538	-86	57	6	54	1	31
96R025	Alluvium	16	498510	5987935	498510	5988151	-87.02275	54.04161	-87	1	22	54	2	30
96R026	Alluvium	16	502943	5999010	502943	5999226	-86.95495	54.14114	-86	57	18	54	8	28
96R027	Alluvium	16	509910	5996920	509910	5997136	-86.84837	54.12227	-86	50	54	54	7	20
96R028	Alluvium	16	514930	5994740	514929	5994956	-86.77169	54.10255	-86	46	18	54	6	9
96R029	Alluvium	16	563910	5970420	563908	5970637	-86.02782	53.88026	-86	1	40	53	52	49
96R030	Alluvium	16	560130	5968920	560128	5969137	-86.08560	53.86723	-86	5	8	53	52	2
96R031	Alluvium	16	557320	5965290	557318	5965507	-86.12901	53.83492	-86	7	44	53	50	6
96R032	Alluvium	16	555750	5962580	555748	5962797	-86.15336	53.81074	-86	9	12	53	48	39
96R033	Glaciofluvial	16	554770	5965990	554768	5966207	-86.16763	53.84149	-86	10	3	53	50	29
96R034	Alluvium	16	555320	5962110	555318	5962327	-86.15997	53.80656	-86	9	36	53	48	24
96R035	Alluvium	16	549880	5961930	549878	5962147	-86.24260	53.80549	-86	14	33	53	48	20
96R036	Alluvium	16	546210	5958420	546208	5958637	-86.29885	53.77428	-86	17	56	53	46	27
96R037	Alluvium	16	562020	5931080	562018	5931297	-86.06444	53.52693	-86	3	52	53	31	37
96R038	Alluvium	15	558330	5927200	558328	5927417	-86.12082	53.49248	-86	7	15	53	29	33
96R039	Alluvium	16	558630	5922040	558628	5922257	-86.11726	53.44607	-86	7	2	53	26	46
96R040	Alluvium	16	555300	5917300	555298	5917517	-86.16822	53.40383	-86	10	6	53	24	14
96R041	Alluvium	16	536580	5961710	536579	5961927	-86.44456	53.80462	-86	26	40	53	48	17
96R042	Alluvium	16	537480	5956520	537479	5956737	-86.43152	53.75791	-86	25	53	53	45	28
96R043	Alluvium	16	536960	5946140	536959	5946357	-86.44065	53.66465	-86	26	26	53	39	53
96R044	Alluvium	16	544230	5926730	544228	5926947	-86.33340	53.48963	-86	20	0	53	29	23
96R045	Alluvium	16	544200	5926890	544198	5927107	-86.33383	53.49107	-86	20	2	53	29	28
96R046	Alluvium	16	538640	5923130	538639	5923347	-86.41807	53.45771	-86	25	5	53	27	28
96R047	Alluvium	16	532500	5919610	532499	5919827	-86.51090	53.42649	-86	30	39	53	25	35
96R048	Alluvium	16	528760	5916490	528759	5916707	-86.56747	53.39866	-86	34	3	53	23	55
96R049	Alluvium	16	510690	5929110	510690	5929327	-86.83879	53.51277	-86	50	20	53	30	46
96R050	Alluvium	16	509370	5925510	509370	5925727	-86.85881	53.48044	-86	51	32	53	28	50
96R051	Alluvium	16	509040	5922790	509040	5923007	-86.86386	53.45600	-86	51	50	53	27	22
96R052	Alluvium	16	509380	5918195	509380	5918412	-86.85887	53.41469	-86	51	32	53	24	53
96R053	Alluvium	16	506980	5911400	506980	5911617	-86.89513	53.35365	-86	53	42	53	21	13
96R054	Alluvium	16	500310	5908395	500310	5908612	-86.99535	53.32668	-86	59	43	53	19	36
96R055	Alluvium	16	502520	5900850	502520	5901067	-86.96222	53.25885	-86	57	44	53	15	32

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96R056	Till	16	523820	5924780	523819	5924997	-86.64114	53.47342	-86	38	28	53	28	24
96R057	Glaciofluvial	16	522790	5919340	522789	5919557	-86.65705	53.42457	-86	39	25	53	25	28
96R058	Alluvium	16	542780	5925110	542779	5925327	-86.35545	53.47519	-86	21	20	53	28	31
96R059	Alluvium	16	537590	5921090	537589	5921307	-86.43413	53.43945	-86	26	3	53	26	22
96R060	Alluvium	16	535220	5918330	535219	5918547	-86.47011	53.41481	-86	28	12	53	24	53
96R061	Alluvium	16	534820	5915140	534819	5915357	-86.47648	53.38616	-86	28	35	53	23	10
96R062	Alluvium	16	535180	5912470	535179	5912687	-86.47137	53.36214	-86	28	17	53	21	44
96R063	Alluvium	16	533790	5904295	533789	5904512	-86.49313	53.28875	-86	29	35	53	17	20
96R064	Till	16	525650	5907905	525649	5908122	-86.61494	53.32165	-86	36	54	53	19	18
96R065	Till	16	523590	5901020	523589	5901237	-86.64638	53.25986	-86	38	47	53	15	35
96R066	Alluvium	16	540970	5923330	540969	5923547	-86.38296	53.45934	-86	22	59	53	27	34
96R067	Glaciofluvial	16	546320	5918680	546318	5918897	-86.30308	53.41710	-86	18	11	53	25	2
96R068	Alluvium	16	558080	5927150	558078	5927367	-86.12460	53.49206	-86	7	29	53	29	31
96R069	Alluvium	16	555330	5916090	555328	5916307	-86.16799	53.39295	-86	10	5	53	23	35
96R070	Alluvium	16	555110	5914090	555108	5914307	-86.17164	53.37500	-86	10	18	53	22	30
96R071	Alluvium	16	555320	5912280	555318	5912497	-86.16880	53.35871	-86	10	8	53	21	31
96R072	Alluvium	16	554690	5910100	554688	5910317	-86.17864	53.33918	-86	10	43	53	20	21
96R073	Alluvium	16	552430	5904480	552428	5904697	-86.21351	53.28890	-86	12	49	53	17	20
96R074	Alluvium	16	552160	5899680	552158	5899897	-86.21835	53.24578	-86	13	6	53	14	45
96R075	Alluvium	16	551710	5894060	551708	5894277	-86.22600	53.19531	-86	13	34	53	11	43
96R076	Alluvium	16	551780	5893960	551778	5894177	-86.22497	53.19440	-86	13	30	53	11	40
96R077	Alluvium	16	545990	5892830	545988	5893047	-86.31179	53.18478	-86	18	42	53	11	5
96R078	Alluvium	16	502670	5959260	502670	5959477	-86.95948	53.78388	-86	57	34	53	47	2
96R079	Alluvium	16	502780	5956730	502780	5956947	-86.95783	53.76114	-86	57	28	53	45	40
96R080	Alluvium	16	501380	5953780	501380	5953997	-86.97908	53.73463	-86	58	45	53	44	5
96R081	Alluvium	16	499557	5952250	499557	5952467	-87.00671	53.72088	-87	0	24	53	43	15
96R082	Alluvium	16	501400	5959260	501400	5959477	-86.97875	53.78388	-86	58	44	53	47	2
96R083	Alluvium	16	508195	5951130	508195	5951347	-86.87584	53.71075	-86	52	33	53	42	39
96R084	Alluvium	16	508260	5949590	508260	5949807	-86.87490	53.69690	-86	52	30	53	41	49
96R085	Alluvium	16	506290	5945850	506290	5946067	-86.90481	53.66331	-86	54	17	53	39	48
96R086	Alluvium	16	506220	5942170	506220	5942387	-86.90594	53.63024	-86	54	21	53	37	49
96R087	Alluvium	16	501580	5935730	501580	5935947	-86.97614	53.57239	-86	58	34	53	34	21
96R088	Alluvium	16	506140	5936930	506140	5937147	-86.90725	53.58314	-86	54	26	53	34	59
96R089	Alluvium	16	541070	5893970	541069	5894187	-86.38526	53.19543	-86	23	7	53	11	44
96R090	Alluvium	16	537000	5894070	536999	5894287	-86.44616	53.19663	-86	26	46	53	11	48
96R091	Alluvium	16	533660	5891940	533659	5892157	-86.49638	53.17770	-86	29	47	53	10	40
96R092	Alluvium	16	532030	5889430	532029	5889647	-86.52102	53.15524	-86	31	16	53	9	19
96R093	Alluvium	16	529680	5886090	529679	5886307	-86.55647	53.12535	-86	33	23	53	7	31
96R094	Alluvium	16	519880	5879580	519879	5879797	-86.70332	53.06729	-86	42	12	53	4	2
96R095	Alluvium	16	527410	5880450	527409	5880667	-86.59088	53.07478	-86	35	27	53	4	29
96R096	Alluvium	16	527940	5876770	527939	5876987	-86.58328	53.04167	-86	34	60	53	2	30
96R097	Alluvium	16	526200	5873040	526199	5873257	-86.60954	53.00823	-86	36	34	53	0	30
96R098	Alluvium	16	528490	5874680	528489	5874897	-86.57526	53.02285	-86	34	31	53	1	22
96R099	Alluvium	16	552320	5897690	552318	5897907	-86.21628	53.22788	-86	12	59	53	13	40
96R100	Alluvium	16	551830	5892130	551828	5892347	-86.22452	53.17795	-86	13	28	53	10	41
96R101	Alluvium	16	551760	5892210	551758	5892427	-86.22556	53.17868	-86	13	32	53	10	43
96R102	Alluvium	16	553860	5889320	553858	5889537	-86.19462	53.15249	-86	11	41	53	9	9
96R103	Alluvium	16	547730	5886130	547728	5886347	-86.28676	53.12440	-86	17	12	53	7	28
96R104	Alluvium	16	547420	5884120	547418	5884337	-86.29169	53.10636	-86	17	30	53	6	23
96R105	Alluvium	16	547980	5879550	547978	5879767	-86.28400	53.06523	-86	17	2	53	3	55
96R106	Alluvium	16	549370	5875770	549368	5875987	-86.26384	53.03113	-86	15	50	53	1	52
96R107	Alluvium	16	548320	5867920	548318	5868137	-86.28067	52.96067	-86	16	50	52	57	38
96R108	Alluvium	16	544830	5869160	544828	5869377	-86.33245	52.97211	-86	19	57	52	58	20
96R109	Alluvium	16	538290	5867630	538289	5867847	-86.43000	52.95887	-86	25	48	52	57	32
96R110	Glaciofluvial	16	535500	5863640	535499	5863857	-86.47197	52.92319	-86	28	19	52	55	23
96R111	Alluvium	16	548120	5891020	548118	5891237	-86.28019	53.16832	-86	16	49	53	10	6
96R112	Alluvium	16	544150	5889920	544148	5890137	-86.33973	53.15878	-86	20	23	53	9	32
96R113	Alluvium	16	538930	5886060	538929	5886277	-86.41825	53.12449	-86	25	6	53	7	28
96R114	Alluvium	16	536070	5882630	536069	5882847	-86.46137	53.09386	-86	27	41	53	5	38
96R115	Alluvium	16	536020	5882610	536019	5882827	-86.46212	53.09368	-86	27	44	53	5	37
96R116	Alluvium	16	516060	5940280	516059	5940497	-86.75726	53.61304	-86	45	26	53	36	47
96R117	Alluvium	16	516920	5930480	516919	5930697	-86.74479	53.52493	-86	44	41	53	31	30
96R118	Alluvium	16	515380	5926880	515379	5927097	-86.76819	53.49261	-86	46	5	53	29	33
96R119	Alluvium	16	502790	5897380	502790	5897597	-86.95821	53.22766	-86	57	30	53	13	40
96R120	Alluvium	16	502750	5897310	502750	5897527	-86.95881	53.22703	-86	57	32	53	13	37
96R121	Alluvium	16	500370	5900185	500370	5900402	-86.99445	53.25288	-86	59	40	53	15	10
96R122	Alluvium	16	499161	5894679	499161	5894896	-87.01256	53.20339	-87	0	45	53	12	12
96R123	Glaciofluvial	16	500149	5884408	500149	5884625	-86.99777	53.11106	-86	59	52	53	6	40
96R124	Alluvium	16	505220	5882910	505220	5883127	-86.92204	53.09757	-86	55	19	53	5	51
96R125	Alluvium	16	504390	5877100	504390	5877317	-86.93452	53.04535	-86	56	4	53	2	43
96R126	Alluvium	16	503620	5871530	503620	5871747	-86.94606	52.99528	-86	56	46	52	59	43
96R127	Till	16	504930	5866070	504930	5866287	-86.92663	52.94619	-86	55	36	52	56	46
96R128	Till	16	503640	5857780	503640	5857997	-86.94592	52.87168	-86	56	45	52	52	18
96R129	Till	16	503230	5855730	503230	5855948	-86.95203	52.85326	-86	57	7	52	51	12

		Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
Sample Site #	Sample Material	UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96R130	Till	16	510370	5883140	510370	5883357	-86.84512	53.09956	-86	50	42	53	5	58
96R131	Alluvium	16	511410	5896960	511410	5897177	-86.82910	53.22377	-86	49	45	53	13	26
96R132	Alluvium	16	512560	5891110	512560	5891327	-86.81210	53.17116	-86	48	44	53	10	16
96R133	Alluvium	16	512920	5883070	512920	5883287	-86.80704	53.09887	-86	48	25	53	5	56
96R134	Alluvium	16	511240	5874230	511240	5874447	-86.83244	53.01945	-86	49	57	53	1	10
96R135	Till	16	516075	5876770	516074	5876987	-86.76025	53.04216	-86	45	37	53	2	32
96R136	Alluvium	16	514800	5881750	514799	5881967	-86.77904	53.08696	-86	46	45	53	5	13
96R137	Alluvium	16	513880	5892310	513880	5892527	-86.79230	53.18191	-86	47	32	53	10	55
96R138	Alluvium	16	533150	5881410	533149	5881627	-86.50510	53.08308	-86	30	18	53	4	59
96R139	Alluvium	16	530900	5879400	530899	5879617	-86.53888	53.06515	-86	32	20	53	3	55
96R140	Alluvium	16	529880	5877620	529879	5877837	-86.55427	53.04920	-86	33	15	53	2	57
96R141	Alluvium	16	529930	5873720	529929	5873937	-86.55389	53.01414	-86	33	14	53	0	51
96R142	Alluvium	16	530395	5869930	530394	5870147	-86.54731	52.98005	-86	32	50	52	58	48
96R143	Alluvium	16	530420	5865760	530419	5865977	-86.54733	52.94256	-86	32	50	52	56	33
96R144	Alluvium	16	529580	5860290	529579	5860507	-86.56033	52.89344	-86	33	37	52	53	36
96R145	Alluvium	16	527920	5855940	527919	5856157	-86.58538	52.85442	-86	35	7	52	51	16
96R146	Alluvium	16	523610	5854930	523609	5855148	-86.64946	52.84556	-86	38	58	52	50	44
96R147	Alluvium	16	521080	5853790	521079	5854008	-86.68709	52.83542	-86	41	14	52	50	8
96R148	Alluvium	16	518890	5854070	518889	5854288	-86.71959	52.83801	-86	43	11	52	50	17
96R149	Alluvium	16	516680	5853750	516679	5853968	-86.75241	52.83521	-86	45	9	52	50	7
96R150	Alluvium	16	516205	5846990	516204	5847208	-86.75980	52.77445	-86	45	35	52	46	28
96R151	Alluvium	16	516330	5843990	516329	5844208	-86.75809	52.74748	-86	45	29	52	44	51
96R152	Alluvium	16	516250	5840630	516249	5840848	-86.75944	52.71728	-86	45	34	52	43	2
96R153	Alluvium	16	516800	5835200	516799	5835418	-86.75158	52.66845	-86	45	6	52	40	6
96R154	Alluvium	16	514220	5829570	514220	5829788	-86.78996	52.61791	-86	47	24	52	37	4
96R155	Alluvium	16	513500	5839670	513500	5839888	-86.80018	52.70872	-86	48	1	52	42	31
96R156	Alluvium	16	507780	5830950	507780	5831168	-86.88505	52.63044	-86	53	6	52	37	50
96R157	Alluvium	16	510980	5836300	510980	5836518	-86.83759	52.67849	-86	50	15	52	40	43
96R158	Till	16	511050	5829925	511050	5830143	-86.83677	52.62117	-86	50	12	52	37	16
96R159	Till	16	507830	5825320	507830	5825538	-86.88445	52.57983	-86	53	4	52	34	47
96R160	Alluvium	16	515350	5852380	515349	5852598	-86.77222	52.82293	-86	46	20	52	49	23
96R161	Alluvium	16	513880	5855090	513880	5855308	-86.79390	52.84734	-86	47	38	52	50	50
96R162	Alluvium	16	510720	5854480	510720	5854698	-86.84084	52.84192	-86	50	27	52	50	31
96R163	Alluvium	16	508010	5847720	508010	5847938	-86.88124	52.78120	-86	52	52	52	46	52
96R164	Alluvium	16	507120	5843220	507120	5843438	-86.89454	52.74076	-86	53	40	52	44	27
96R165	Till	16	505000	5833830	505000	5834048	-86.92608	52.65637	-86	55	34	52	39	23
96R166	Alluvium	16	500490	5832220	500490	5832438	-86.99276	52.64192	-86	59	34	52	38	31
96R167	Till	16	501050	5823950	501050	5824168	-86.98451	52.56757	-86	59	4	52	34	3
96R168	Till	16	503890	5807960	503890	5808178	-86.94279	52.42380	-86	56	34	52	25	26
96R169	Alluvium	16	504070	5803000	504070	5803218	-86.94021	52.37921	-86	56	25	52	22	45
96R170	Alluvium	16	566120	5877180	566118	5877397	-86.01382	53.04200	-86	0	50	53	2	31
96R171	Alluvium	16	562400	5875780	562398	5875997	-86.06956	53.02986	-86	4	10	53	1	47
96R172	Alluvium	16	561920	5871710	561918	5871927	-86.07750	52.99333	-86	4	39	52	59	36
96R173	Alluvium	16	558070	5869780	558068	5869997	-86.13520	52.97642	-86	8	7	52	58	35
96R174	Alluvium	16	554310	5866910	554308	5867127	-86.19167	52.95101	-86	11	30	52	57	4
96R175	Alluvium	16	551910	5862300	551908	5862517	-86.22813	52.90981	-86	13	41	52	54	35
96R176	Alluvium	16	551120	5857460	551118	5857677	-86.24064	52.86638	-86	14	26	52	51	59
96R177	Alluvium	16	550610	5853700	550608	5853918	-86.24879	52.83264	-86	14	56	52	49	58
96R178	Alluvium	16	548010	5848180	548008	5848398	-86.28820	52.78326	-86	17	18	52	46	60
96R179	Alluvium	16	545690	5843890	545688	5844108	-86.32319	52.74490	-86	19	23	52	44	42
96R180	Alluvium	16	543570	5836340	543568	5836558	-86.35559	52.67720	-86	21	20	52	40	38
96R181	Alluvium	16	541930	5832980	541929	5833198	-86.38026	52.64713	-86	22	49	52	38	50
96R182	Alluvium	16	542130	5827320	542129	5827538	-86.37803	52.59623	-86	22	41	52	35	46
96R183	Alluvium	16	548330	5854140	548328	5854358	-86.28257	52.83681	-86	16	57	52	50	13
96R184	Alluvium	16	547130	5853030	547128	5853248	-86.30054	52.82694	-86	18	2	52	49	37
96R185	Alluvium	16	543380	5850530	543379	5850748	-86.35651	52.80478	-86	21	23	52	48	17
96R186	Alluvium	16	540520	5847880	540519	5848098	-86.39926	52.78118	-86	23	57	52	46	52
96R187	Alluvium	16	535470	5843660	535469	5843878	-86.47459	52.74360	-86	28	29	52	44	37
96R188	Alluvium	16	536080	5837870	536079	5838088	-86.46619	52.69151	-86	27	58	52	41	29
96R189	Alluvium	16	537000	5829840	536999	5830058	-86.45348	52.61926	-86	27	13	52	37	9
96R190	Alluvium	16	535310	5821920	535309	5822138	-86.47928	52.54817	-86	28	45	52	32	53
96R191	Till	16	532720	5815230	532719	5815448	-86.51814	52.48819	-86	31	5	52	29	17
96R192	Alluvium	16	531430	5808930	531429	5809148	-86.53773	52.43163	-86	32	16	52	25	54
96R193	Alluvium	16	529440	5802730	529439	5802948	-86.56754	52.37601	-86	34	3	52	22	34
96R194	Alluvium	16	529460	5799640	529459	5799858	-86.56752	52.34823	-86	34	3	52	20	54
96R195	Till	16	522490	5798370	522489	5798588	-86.66993	52.33714	-86	40	12	52	20	14
96R196	Till	16	512700	5793640	512700	5793858	-86.81378	52.29493	-86	48	50	52	17	42
96R197	Till	16	509040	5791840	509040	5792058	-86.86749	52.27882	-86	52	3	52	16	44
96R198	Till	16	533660	5800790	533659	5801008	-86.50575	52.35832	-86	30	21	52	21	30
96R199	Alluvium	16	537020	5849760	537019	5849978	-86.45094	52.79833	-86	27	3	52	47	54
96R200	Alluvium	16	533560	5849050	533559	5849268	-86.50233	52.79217	-86	30	8	52	47	32
96R201	Alluvium	16	529870	5844440	529869	5844658	-86.55747	52.75095	-86	33	27	52	45	3
96R202	Alluvium	16	527980	5841660	527979	5841878	-86.58571	52.72606	-86	35	9	52	43	34
96R203	Till	16	524110	5838830	524109	5839048	-86.64322	52.70080	-86	38	36	52	42	3

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96R204	Alluvium	16	522340	5831420	522339	5831638	-86.66991	52.63427	-86	40	12	52	38	3
96R205	Alluvium	16	521780	5828510	521779	5828728	-86.67838	52.60813	-86	40	42	52	36	29
96R206	Alluvium	16	522560	5825230	522559	5825448	-86.66708	52.57861	-86	40	1	52	34	43
96R207	Alluvium	16	524180	5818890	524179	5819108	-86.64364	52.52154	-86	38	37	52	31	18
96R208	Alluvium	16	522150	5818980	522149	5819198	-86.67355	52.52244	-86	40	25	52	31	21
96R209	Alluvium	16	521790	5839010	521789	5839228	-86.67754	52.70252	-86	40	39	52	42	9
96R210	Alluvium	16	520090	5833330	520089	5833548	-86.70304	52.65152	-86	42	11	52	39	5
96R211	Alluvium	16	520550	5827260	520549	5827478	-86.69662	52.59694	-86	41	48	52	35	49
96R212	Alluvium	16	518310	5823600	518309	5823818	-86.72989	52.56412	-86	43	48	52	33	51
96R213	Alluvium	16	518560	5818830	518559	5819048	-86.72647	52.52122	-86	43	35	52	31	16
96R214	Till	16	518990	5812010	518989	5812228	-86.72052	52.45990	-86	43	14	52	27	36
96R215	Till	16	519050	5807530	519049	5807748	-86.71990	52.41962	-86	43	12	52	25	11
96R216	Alluvium	16	516870	5817710	516869	5817928	-86.75144	52.51121	-86	45	5	52	30	40
96R217	Alluvium	16	513950	5812480	513950	5812698	-86.79467	52.46427	-86	47	41	52	27	51
96R218	Alluvium	16	583530	5873010	583527	5873227	-85.75529	53.00208	-85	45	19	53	0	7
96R219	Alluvium	16	578630	5868850	578627	5869067	-85.82931	52.96544	-85	49	46	52	57	56
96R220	Alluvium	16	574530	5866140	574527	5866357	-85.89096	52.94167	-85	53	27	52	56	30
96R221	Alluvium	16	577550	5861140	577547	5861357	-85.84722	52.89630	-85	50	50	52	53	47
96R222	Alluvium	16	574060	5854790	574057	5855007	-85.90054	52.83972	-85	54	2	52	50	23
96R223	Alluvium	16	573320	5847280	573317	5847498	-85.91321	52.77233	-85	54	48	52	46	20
96R224	Alluvium	16	573390	5847180	573387	5847398	-85.91219	52.77142	-85	54	44	52	46	17
96R225	Alluvium	16	577220	5865180	577217	5865397	-85.85117	52.93266	-85	51	4	52	55	58
96R226	Alluvium	16	570070	5864580	570068	5864797	-85.95764	52.92825	-85	57	28	52	55	42
96R227	Alluvium	16	569940	5864610	569938	5864827	-85.95957	52.92853	-85	57	34	52	55	43
96R228	Alluvium	16	571530	5834680	571528	5834898	-85.94246	52.65931	-85	56	33	52	39	34
96R229	Alluvium	16	567620	5828610	567618	5828828	-86.00151	52.60526	-86	0	5	52	36	19
96R230	Alluvium	16	566000	5823900	565998	5824118	-86.02636	52.56312	-86	1	35	52	33	47
96R231	Alluvium	16	566610	5822010	566608	5822228	-86.01774	52.54605	-86	1	4	52	32	46
96R232	Alluvium	16	565380	5818550	565378	5818768	-86.03656	52.51510	-86	2	12	52	30	54
96R233	Alluvium	16	565470	5815320	565468	5815538	-86.03587	52.48606	-86	2	9	52	29	10
96R234	Alluvium	16	569900	5879700	569898	5879917	-85.95690	53.06417	-85	57	25	53	3	51
96R235	Alluvium	16	565190	5811520	565188	5811738	-86.04074	52.45193	-86	2	27	52	27	7
96R236	Alluvium	16	565070	5810780	565068	5810998	-86.04265	52.44529	-86	2	34	52	26	43
96R237	Alluvium	16	562480	5807890	562478	5808108	-86.08129	52.41962	-86	4	53	52	25	11
96R238	Alluvium	16	556870	5806930	556868	5807148	-86.16393	52.41160	-86	9	50	52	24	42
96R239	Alluvium	16	556040	5803380	556038	5803598	-86.17673	52.37977	-86	10	36	52	22	47
96R240	Alluvium	16	556060	5803410	556058	5803628	-86.17643	52.38004	-86	10	35	52	22	48
96R241	Till	16	556790	5894090	556788	5894307	-86.14997	53.19506	-86	8	60	53	11	42
96R242	Alluvium	16	552105	5802030	552103	5802248	-86.23474	52.36803	-86	14	5	52	22	5
96R243	Alluvium	16	552090	5802050	552088	5802268	-86.23496	52.36821	-86	14	6	52	22	6
96R244	Alluvium	16	550820	5797620	550818	5797838	-86.25428	52.32850	-86	15	15	52	19	43
96R245	Till	16	571850	5801420	571848	5801638	-85.94492	52.36031	-85	56	42	52	21	37
96R246	Alluvium	16	551790	5801090	551788	5801308	-86.23951	52.35961	-86	14	22	52	21	35
96R247	Alluvium	16	548780	5794190	548778	5794408	-86.28471	52.29785	-86	17	5	52	17	52
96R248	Till	16	534660	5786830	534659	5787048	-86.49250	52.23276	-86	29	33	52	13	58
96R249	Till	16	538790	5791410	538789	5791628	-86.43150	52.27366	-86	25	53	52	16	25
96R250	Till	16	539080	5805580	539079	5805798	-86.42561	52.40102	-86	25	32	52	24	4
96R251	Alluvium	16	548010	5790720	548008	5790938	-86.29650	52.26673	-86	17	47	52	16	0
96R252	Alluvium	16	544820	5786080	544818	5786298	-86.34386	52.22528	-86	20	38	52	13	31
96R253	Alluvium	16	537170	5780480	537169	5780698	-86.45645	52.17551	-86	27	23	52	10	32
96R254	Alluvium	16	534320	5778800	534319	5779018	-86.49829	52.16059	-86	29	54	52	9	38
96R255	Alluvium	16	538820	5777180	538819	5777398	-86.43270	52.14572	-86	25	58	52	8	45
96R256	Till	16	549110	5774980	549108	5775198	-86.28266	52.12513	-86	16	58	52	7	30
96R257	Alluvium	16	549880	5778160	549878	5778378	-86.27095	52.15365	-86	16	15	52	9	13
96R258	Glaciofluvial	16	551660	5793710	551658	5793928	-86.24256	52.29327	-86	14	33	52	17	36
96R259	Glaciofluvial	16	556520	5803120	556518	5803338	-86.16972	52.37739	-86	10	11	52	22	39
96R260	Glaciofluvial	16	553340	5810320	553338	5810538	-86.21528	52.44243	-86	12	55	52	26	33
96R261	Glaciofluvial	16	545560	5778580	545558	5778798	-86.33403	52.15780	-86	20	3	52	9	28
96R262	Glaciofluvial	16	534820	5785720	534819	5785938	-86.49027	52.22277	-86	29	25	52	13	22
96R263	Glaciofluvial	16	538620	5789980	538619	5790198	-86.43416	52.26081	-86	26	3	52	15	39
96R264	Till	16	561610	5891200	561608	5891417	-86.07839	53.16855	-86	4	42	53	10	7
96R265	Glaciofluvial	16	539690	5811500	539689	5811718	-86.41594	52.45420	-86	24	57	52	27	15
96R266	Glaciofluvial	16	542490	5818190	542489	5818408	-86.37388	52.51413	-86	22	26	52	30	51
96R267	Glaciofluvial	16	544000	5829870	543998	5830088	-86.35010	52.61901	-86	21	0	52	37	8
96R268	Glaciofluvial	16	543620	5839220	543618	5839438	-86.35447	52.70309	-86	21	16	52	42	11
96R269	Till	16	542210	5842040	542209	5842258	-86.37496	52.72855	-86	22	30	52	43	43
96R270	Till	16	542280	5841120	542279	5841338	-86.37404	52.72028	-86	22	27	52	43	13
96R271	Glaciofluvial	16	545220	5843680	545218	5843898	-86.33018	52.74305	-86	19	49	52	44	35
96R272	Glaciofluvial	16	550680	5855230	550678	5855447	-86.24752	52.84638	-86	14	51	52	50	47
96R273	Alluvium	16	553720	5847910	553718	5848128	-86.20359	52.78030	-86	12	13	52	46	49
96R274	Till	16	555230	5829820	555228	5830038	-86.18424	52.61753	-86	11	3	52	37	3
96R275	Till	16	511680	5842090	511680	5842308	-86.82703	52.73052	-86	49	37	52	43	50
96R276	Till	16	499700	5838200	499700	5838418	-87.00444	52.69568	-87	0	16	52	41	44
96R277	Till	16	514500	5824980	514500	5825198	-86.78603	52.57664	-86	47	10	52	34	36

Sample Site #	Sample Material	Projected Coordinates					Geographic Coordinates		Geographic Coordinates					
		UTM Zone	Easting (NAD27)	Northing (NAD27)	Easting (NAD83)	Northing (NAD83)	East (deg)	North (deg)	East			North		
									deg	min	sec	deg	min	sec
96R278	Till	16	515820	5826010	515819	5826228	-86.76651	52.58586	-86	45	59	52	35	9
96R279	Alluvium	16	568000	5877200	567998	5877417	-85.98578	53.04194	-85	59	9	53	2	31
96R280	Alluvium	16	569950	5878580	569948	5878797	-85.95640	53.05409	-85	57	23	53	3	15
96R281	Alluvium	16	573550	5881100	573547	5881317	-85.90213	53.07626	-85	54	8	53	4	35
96R282	Alluvium	16	578300	5883620	578297	5883837	-85.83063	53.09823	-85	49	50	53	5	54
96R283	Alluvium	16	579750	5887900	579747	5888117	-85.80792	53.13648	-85	48	29	53	8	11
96R284	Alluvium	16	582100	5889100	582097	5889317	-85.77249	53.14691	-85	46	21	53	8	49
96R285	Alluvium	16	583850	5890250	583847	5890467	-85.74603	53.15697	-85	44	46	53	9	25
96R286	Alluvium	16	588800	5891500	588797	5891717	-85.67167	53.16740	-85	40	18	53	10	3
96R287	Alluvium	16	593800	5894950	593797	5895167	-85.59589	53.19755	-85	35	45	53	11	51
96R288	Alluvium	16	602380	5896700	602376	5896917	-85.46695	53.21169	-85	28	1	53	12	42
96R289	Alluvium	16	607750	5895100	607746	5895317	-85.38711	53.19625	-85	23	14	53	11	47
96R290	Alluvium	16	610000	5892950	609996	5893167	-85.35419	53.17648	-85	21	15	53	10	35
96R291	Alluvium	16	613400	5890900	613396	5891117	-85.30406	53.15734	-85	18	15	53	9	26
96R292	Alluvium	16	611350	5886900	611346	5887117	-85.33610	53.12183	-85	20	10	53	7	19
96R293	Alluvium	16	606050	5884600	606046	5884817	-85.41603	53.10225	-85	24	58	53	6	8
96R294	Alluvium	16	600900	5884500	600896	5884717	-85.49295	53.10235	-85	29	35	53	6	8
96R295	Alluvium	16	597200	5880500	597197	5880717	-85.54939	53.06709	-85	32	58	53	4	2
96R296	Alluvium	16	595800	5877500	595797	5877717	-85.57117	53.04038	-85	34	16	53	2	25
96R297	Alluvium	16	587900	5875400	587897	5875617	-85.68954	53.02286	-85	41	22	53	1	22
96R298	Till	16	549160	5878360	549158	5878577	-86.26658	53.05443	-86	15	60	53	3	16
96R299	Till	16	549380	5878520	549378	5878737	-86.26327	53.05585	-86	15	48	53	3	21
96R300	Till	16	548260	5887810	548258	5888027	-86.27858	53.13945	-86	16	43	53	8	22
96R301	Alluvium	16	548120	5892510	548118	5892727	-86.27997	53.18171	-86	16	48	53	10	54
96R302	Till	16	515420	5884220	515419	5884437	-86.76966	53.10915	-86	46	11	53	6	33
96R303	Till	16	523140	5892390	523139	5892607	-86.65375	53.18231	-86	39	14	53	10	56
96R304	Till	16	524980	5894730	524979	5894947	-86.62603	53.20326	-86	37	34	53	12	12
96R305	Till	16	522980	5898580	522979	5898797	-86.65570	53.23796	-86	39	21	53	14	17
96R306	Till	16	563580	5901400	563578	5901617	-86.04689	53.25999	-86	2	49	53	15	36
96R307	Till	16	563530	5901170	563528	5901387	-86.04768	53.25793	-86	2	52	53	15	29
96R308	Glaciofluvial	16	552160	5901740	552158	5901957	-86.21801	53.26429	-86	13	5	53	15	51
96R309	Till	16	546870	5910460	546868	5910677	-86.29603	53.34317	-86	17	46	53	20	35
96R310	Till	16	546160	5915050	546158	5915267	-86.30602	53.38448	-86	18	22	53	23	4
96R311	Till	16	518380	5926820	518379	5927037	-86.72298	53.49198	-86	43	23	53	29	31

Appendix B

Sample Preparation Results for Gravity Table and Heavy Liquids Concentration by Consorminex Inc.

Notes:

The shaker table heavy mineral concentrates were dried, in an oven, at 40 to 50°C. This may result in small discrepancies in the weight of fractions after they have been passed through the heavy liquid.

* The –80 mesh fraction was sent to Activation Labs (2H Au+47).

** After sieving the original (bulk) sample to 1.7 mm, an amount of the <1.7 mm fraction sufficient to yield 50 to75g of -80 mesh was removed and sieved. The entire –80 mesh fraction recuperated was sent to Activation Labs (2H Au+47).

----- Weight of >1.7 mm not recorded.

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P001	Alluvium	16700	7200	182.28	78.95	69.77	49.54	20.14	33.63	
96P002	Alluvium	17750	8050	198.24	94.94	63.26	42.84	20.35	40.04	
96P003	Alluvium	18600	5900	214.98	104.64	65.14	44.56	20.46	45.43	
96P004	Alluvium	18000	3000	337.34	201.36	51.27	24.83	26.34	84.86	
96P005	Alluvium	18950	7750	309.46	120.84	117.10	95.52	21.51	71.38	
96P006	Alluvium	20800	12100	158.76	77.18	46.97	30.14	16.65	34.68	
96P007	Alluvium	22500	9200	246.37	112.38	64.38	38.40	26.27	69.28	
96P008	Alluvium	18000	8400	149.04	63.52	55.04	40.11	14.84	30.57	
96P009	Alluvium	16450	11700	101.53	56.30	28.73	17.30	11.24	16.89	
96P010	Alluvium	18150	5950	235.30	118.87	45.84	33.80	12.01	70.39	
96P011	Alluvium	18950	7500	351.21	138.06	108.57	85.52	23.10	104.77	
96P012	Alluvium	9000	1350	179.89	65.56	59.85	46.94	12.87	54.63	No Al tag in bag.
96P013	Alluvium	16650	6300	189.18	103.10	55.02	25.28	29.78	31.15	Rich in carbonates.
96P014	Alluvium	16300	8450	99.12	68.44	17.70	11.69	6.00	13.24	Rich in carbonates.
96P015	Alluvium	16750	5300	136.73	84.51	37.36	15.92	21.51	14.88	
96P016	Alluvium	15700	7750	193.02	85.17	80.87	55.86	25.02	26.99	
96P017	Alluvium	16700	8150	96.87	61.03	26.12	12.28	13.82	9.93	Rich in carbonates.
96P018	Alluvium	15800	5900	161.07	95.77	55.33	32.40	22.87	9.97	
96P019	Alluvium	16600	5500	214.07	101.59	91.85	60.60	31.08	20.89	
96P020	Alluvium	18250	11800	60.70	30.15	23.92	8.86	15.05	6.80	
96P021	Alluvium	16750	4150	219.52	125.91	50.54	30.41	20.17	43.14	
96P022	Alluvium	18100	6450	296.91	115.46	112.60	82.48	30.52	68.91	
96P023	Alluvium	18600	6100	144.09	83.21	45.51	28.59	17.04	15.40	
96P024	Alluvium	15350	6800	70.47	39.81	20.32	9.98	10.26	10.45	
96P025	Alluvium	13150	6250	68.47	40.80	24.67	14.75	9.76	3.18	
96P026	Alluvium	20000	10000	66.56	24.89	36.36	12.19	24.13	5.46	
96P027	Alluvium	21150	10200	59.05	36.39	17.36	9.24	8.03	5.51	
96P028	Alluvium	16350	7350	81.07	43.35	31.62	20.13	11.46	6.26	
96P029	Alluvium	16450	6450	59.54	34.60	18.99	8.49	10.36	6.12	
96P030	Alluvium	15550	4800	79.58	43.85	34.50	16.56	17.83	1.22	-80 mesh removed from bulk sample**
96P031	Alluvium	20500	11250	81.62	54.62	21.31	9.39	11.79	5.84	-80 mesh removed from bulk sample**
96P032	Alluvium	20350	4900	117.86	81.91	35.14	9.76	25.27	0.87	-80 mesh removed from bulk sample**
96P033	Alluvium	16850	6900	188.04	67.38	78.77	55.48	23.34	41.96	
96P034	Alluvium	22500	10750	240.93	89.30	105.68	73.45	32.25	46.08	
96P035	Alluvium	21550	11450	179.48	59.58	77.65	63.87	13.83	42.28	-80 mesh removed from bulk sample**
96P036	Alluvium	24000	9500	240.69	109.52	61.87	43.64	18.15	69.55	-80 mesh removed from bulk sample.** Rich in carbonates.
96P037	Alluvium	21950	7850	248.19	97.63	96.51	79.99	16.36	53.96	-80 mesh removed from bulk sample**
96P038	Alluvium	17650	7750	163.80	46.05	73.08	51.88	21.09	44.96	
96P039	Alluvium	18700	8250	166.22	61.17	64.39	45.76	18.48	40.75	Rich in carbonates.
96P040	Alluvium	20100	2850	123.29	41.60	55.31	37.40	17.90	26.59	-80 mesh removed from bulk sample**
96P041	Alluvium	19050	7750	75.74	40.18	20.75	11.85	8.78	14.95	
96P042	Alluvium	19500	7550	90.06	45.88	31.25	17.52	13.56	13.00	
96P043	Alluvium	18800	8200	123.19	59.08	41.12	26.25	14.74	23.06	-80 mesh removed from bulk sample**
96P044	Alluvium	19750	6650	152.39	78.25	46.54	29.14	17.36	27.66	
96P045	Alluvium	21100	9200	78.99	43.80	28.13	11.54	16.47	7.15	No Al tag in bag. Rich in carbonates.
96P046	Alluvium	19800	9600	254.38	61.39	124.97	98.28	26.62	68.19	-80 mesh removed from bulk sample**

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P047	Alluvium	19250	8550	117.43	47.25	52.32	33.57	18.71	17.97	
96P048	Alluvium	20500	9450	80.00	54.90	17.46	6.02	11.25	7.75	
96P049	Alluvium	13000	2100	83.85	65.91	16.57	8.08	8.24	1.59	Lots of organic material.
96P050	Alluvium	16500	3300	156.49	103.60	33.27	13.15	19.95	19.78	
96P051	Alluvium	20450	6900	119.58	89.65	19.54	10.25	9.19	10.42	Rich in carbonates.
96P052	Alluvium	16450	5950	201.28	122.32	47.21	21.63	25.47	31.75	
96P053	Alluvium	25200	9950	299.08	165.80	73.29	40.99	32.24	60.30	
96P054	Alluvium	15850	6300	91.24	58.25	20.29	9.85	10.37	12.27	
96P055	Alluvium	19200	11700	123.63	59.88	46.71	23.41	23.06	17.14	-80 mesh removed from bulk sample**
96P056	Alluvium	16500	5150	84.57	56.08	19.53	13.69	5.64	9.15	-80 mesh removed from bulk sample**
96P057	Alluvium	19800	5000	104.60	67.56	29.34	15.99	13.18	7.81	-80 mesh removed from bulk sample**
96P058	Alluvium	19750	6400	83.07	54.46	26.80	14.02	12.71	1.86	-80 mesh removed from bulk sample**
96P059	Alluvium	19400	6000	88.91	56.42	32.01	18.58	13.35	0.42	-80 mesh removed from bulk sample**
96P060	Alluvium	15000	2600	191.23	105.72	59.92	32.54	27.36	26.62	-80 mesh removed from bulk sample** Al tag missing.
96P061	Alluvium	20400	9450	122.80	67.19	40.43	20.51	20.00	15.28	-80 mesh removed from bulk sample**
96P062	Alluvium	21000	9300	90.22	57.08	26.05	13.53	12.64	7.13	-80 mesh removed from bulk sample**
96P063	Alluvium	21200	5250	225.76	167.23	30.84	8.10	22.70	27.67	-80 mesh removed from bulk sample** Rich in carbonates.
96P064	Alluvium	23000	9250	130.09	73.60	51.26	18.42	32.85	5.31	-80 mesh removed from bulk sample**
96P065	Alluvium	18700	14900	31.30	21.13	9.63	1.74	7.85	0.59	-80 mesh removed from bulk sample**
96P066	Alluvium	19650	6100	74.20	43.78	29.08	5.72	23.33	1.25	-80 mesh removed from bulk sample**
96P067	Alluvium	17200	4800	243.77	116.73	71.78	46.14	25.91	55.28	-80 mesh removed from bulk sample**
96P068	Alluvium	16600	9250	71.47	42.83	16.69	7.70	9.06	11.90	-80 mesh removed from bulk sample** Rich in carbonates.
96P069	Alluvium	21250	-------	93.98	76.62	18.04	6.40	11.74	2.73	43.94 g of -80mesh removed from <250µm. Pebbles (> 1.77mm) were not kept.
96P070	Alluvium	20000	7800	84.96	52.22	23.19	10.75	12.44	9.58	-80 mesh removed from bulk sample**
96P071	Alluvium	18900	11650	65.03	38.57	21.51	6.42	15.12	4.98	-80 mesh removed from bulk sample**
96P072	Alluvium	16400	9000	73.09	44.09	17.63	9.45	8.17	11.40	-80 mesh removed from bulk sample**
96P073	Alluvium	20000	5200	71.35	44.55	19.44	8.02	11.41	7.46	-80 mesh removed from bulk sample**
96P074	Alluvium	18900	5900	93.97	64.58	26.70	13.15	13.54	2.66	-80 mesh removed from bulk sample**
96P075	Till	30200	8500	85.05	53.05	22.92	6.14	16.71	9.09	-80 mesh removed from bulk sample** TILL
96P076	Till	27600	3900	87.77	62.58	12.27	2.50	9.45	13.02	-80 mesh removed from bulk sample** TILL
96P077	Alluvium	21200	7750	138.32	85.77	42.90	21.50	21.46	9.60	-80 mesh removed from bulk sample**
96P078	Alluvium	16775	3050	185.09	111.12	69.52	2.63	67.15	4.45	
96P079	Alluvium	21250	5350	129.94	82.39	29.78	12.79	17.18	17.74	
96P080	Alluvium	6700	500	118.16	102.35	9.64	1.53	8.05	6.69	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P081	Alluvium	18025	11200	239.49	147.67	90.91	2.74	87.60	0.97	67.83 g of -80 mesh removed from <250µm.
96P082	Alluvium	16100	11000	193.44	114.46	49.86	17.50	32.52	29.16	-80 mesh removed from bulk sample**
96P083	Alluvium	19850	7300	98.46	41.32	44.87	24.23	20.80	12.35	-80 mesh removed from bulk sample**
96P084	Alluvium	14800	6900	462.57	154.02	206.03	184.01	22.64	102.36	-80 mesh removed from bulk sample**
96P085	Alluvium	23700	11300	130.26	76.18	35.47	16.41	19.14	18.75	-80 mesh removed from bulk sample**
96P086	Alluvium	20450	9850	180.09	79.50	65.24	34.26	31.01	35.28	
96P087	Alluvium	19000	10700	107.69	52.53	39.63	15.10	24.42	15.65	-80 mesh removed from bulk sample**
96P088	Alluvium	19050	8250	186.09	73.04	76.68	40.98	35.72	36.20	
96P089	Alluvium	20200	9350	27.26	18.26	8.15	1.37	6.81	0.78	-80 mesh removed from bulk sample** Very little heavy minerals at table.
96P090	Alluvium	21025	8850	101.69	55.80	22.02	12.43	9.53	23.97	
96P091	Alluvium	17500	9750	89.32	44.25	30.28	10.94	19.25	14.88	-80 mesh removed from bulk sample**
96P092	Alluvium	19000	10150	391.35	85.42	246.78	172.27	76.53	58.80	-80 mesh removed from bulk sample**
96P093	Alluvium	16200	9450	128.57	46.27	68.27	32.87	35.60	14.02	-80 mesh removed from bulk sample**
96P094	Alluvium	17850	12450	54.82	29.44	21.67	6.42	15.26	3.77	
96P095	Alluvium	18000	13850	116.72	56.10	52.23	22.68	29.66	8.42	
96P096	Alluvium	16450	7900	119.62	47.47	68.74	33.48	35.44	3.47	
96P097	Alluvium	18950	3650	134.94	93.37	36.41	13.97	22.45	5.18	
96P098	Alluvium	13400	4450	106.45	66.65	34.59	11.11	23.54	5.23	
96P099	Alluvium	18450	13150	26.35	13.74	11.89	2.34	9.47	0.73	Poor in heavy minerals (at table).
96P100	Alluvium	17750	13500	47.40	20.90	24.42	10.40	13.98	2.12	
96P101	Alluvium	15800	5350	80.45	42.62	36.70	7.47	29.20	1.06	
96P102	Alluvium	16450	6950	84.16	39.90	43.18	14.22	28.87	1.13	
96P103	Alluvium	18150	5350	122.38	62.96	58.29	10.80	47.48	1.12	
96P104	Alluvium	15450	8700	96.99	54.76	30.26	8.30	21.91	12.05	
96P105	Alluvium	19750	5350	321.95	200.39	120.94	17.43	103.12	0.77	
96P106	Alluvium	14900	12850	87.34	39.08	45.18	6.78	38.28	3.16	
96P107	Alluvium	20000	11600	161.41	70.93	71.95	23.28	48.68	18.52	
96P108	Alluvium	18500	5400	230.42	137.43	88.99	14.40	75.06	3.97	
96P109	Alluvium	3950	3350	198.73	62.20	129.56	11.59	118.07	6.93	
96P110	Alluvium	24450	10750	160.94	67.83	59.46	30.43	28.98	33.69	
96P111	Till	21050	4650	76.68	44.59	24.93	1.95	22.99	7.20	Sample rich in organic matter.
96P112	Alluvium	19350	17850	63.55	37.32	24.06	5.46	18.52	2.12	
96P113	Alluvium	13850	8350	76.34	31.77	40.38	11.94	28.43	4.18	
96P114	Alluvium	20150	6050	130.92	87.51	32.71	19.42	13.23	10.63	
96P115	Alluvium	20300	6600	80.42	40.52	34.70	21.77	12.89	5.21	
96P116	Alluvium	19350	10000	175.90	82.99	74.09	32.23	41.73	18.78	
96P117	Alluvium	24350	7100	120.39	60.51	58.05	35.36	22.69	1.98	
96P118	Alluvium	17550	10450	167.26	84.18	71.50	29.15	42.30	11.57	
96P119	Alluvium	19450	4700	156.82	88.31	44.69	20.19	24.41	23.85	
96P120	Alluvium	17300	7000	129.85	83.43	24.77	13.61	11.14	21.72	
96P121	Till	30000	3600	64.13	44.15	8.28	2.02	6.20	11.71	
96P122	Alluvium	14500	5250	109.16	76.61	26.39	9.30	16.81	6.21	
96P123	Alluvium	18750	6450	200.95	111.92	59.28	27.30	31.79	29.60	
96P124	Alluvium	20800	13000	130.86	74.14	38.39	21.49	16.61	18.28	
96P125	Alluvium	16950	7900	134.80	71.88	53.98	29.42	24.29	8.96	
96P126	Alluvium	17450	9500	110.38	62.75	40.00	14.60	25.53	7.64	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P127	Alluvium	17400	12850	87.06	52.85	28.72	10.78	18.07	5.58	
96P128	Alluvium	18250	10600	225.83	124.29	75.52	31.04	44.95	25.95	
96P129	Alluvium	18950	7400	88.76	54.15	32.59	16.69	15.97	2.03	
96P130	Alluvium	19350	7450	174.29	100.70	68.01	22.15	46.05	5.45	
96P131	Alluvium	15150	6050	163.97	86.55	64.65	15.99	49.02	12.81	
96P132	Alluvium	7600	2300	80.89	54.46	25.13	4.90	20.17	1.41	
96P133	Alluvium	17400	13400	62.29	37.07	22.37	5.31	17.14	2.83	
96P134	Alluvium	19950	5850	131.57	93.24	33.64	14.40	19.23	4.77	
96P135	Alluvium	17050	8400	138.86	92.82	44.98	13.01	31.98	1.07	
96P136	Alluvium	16800	5550	153.45	91.19	61.11	4.30	56.78	1.12	
96P137	Glaciofluvial	19900	800	121.57	68.22	50.87	2.89	47.33	2.55	Very little >1.7mm.
96P138	Alluvium	18650	7250	105.41	76.64	28.25	8.94	19.30	0.48	
96P139	Alluvium	19450	6900	158.35	90.62	67.11	11.94	55.06	0.62	
96P140	Alluvium	18300	9150	100.37	53.10	45.27	7.88	37.07	2.22	
96P141	Alluvium	21750	7250	158.54	91.54	48.50	13.14	35.31	18.49	
96P142	Till	18400	8800	202.41	125.22	48.01	15.39	32.62	29.01	
96P143	Till	16550	4900	341.00	224.53	115.36	15.10	100.21	0.86	
96P144	Alluvium	19250	2800	261.36	179.11	59.90	18.03	41.89	22.26	
96P145	Alluvium	19425	7500	172.98	109.22	62.57	10.17	52.43	0.43	
96P146	Alluvium	18050	6450	330.83	171.01	114.25	48.90	65.23	45.62	
96P147	Alluvium	19750	6300	172.03	119.23	49.40	13.59	35.75	2.89	
96P148	Till	16950	2100	226.88	143.45	41.81	10.40	31.49	41.51	
96P149	Alluvium	18250	10500	92.58	55.71	28.54	12.43	16.18	8.31	
96P150	Till	25600	5400	113.06	80.19	17.59	3.49	14.13	15.17	Till. Rich in carbonates.
96P151	Alluvium	17550	10900	74.90	34.88	38.93	2.78	36.07	1.10	
96P152	Alluvium	22050	6900	283.92	179.23	74.45	32.92	41.63	30.17	
96P153	Alluvium	20800	9200	221.06	122.77	80.62	36.87	43.43	17.62	
96P154	Alluvium	17150	7150	106.80	41.26	62.59	14.93	47.95	3.03	
96P155	Alluvium	18200	13050	190.43	86.12	93.49	7.61	85.57	10.81	
96P156	Alluvium	19000	9400	197.35	93.83	68.16	37.33	30.15	35.45	
96P157	Alluvium	17750	6350	245.95	114.26	119.90	51.94	68.07	11.84	
96P158	Alluvium	17700	9900	194.92	97.87	59.78	31.66	28.25	37.28	
96P159	Alluvium	17050	7400	171.35	95.80	71.12	30.70	40.47	4.43	
96P160	Alluvium	17400	9300	105.86	57.53	46.02	10.09	35.92	2.34	
96P161	Alluvium	15000	6650	173.28	102.84	63.82	30.43	33.21	6.74	
96P162	Alluvium	17050	5000	180.42	85.33	46.77	25.68	21.09	48.34	
96P163	Alluvium	21250	4900	235.90	158.60	76.49	16.82	59.56	0.78	
96P164	Alluvium	20500	8200	141.94	96.18	42.17	25.59	16.61	3.66	
96P165	Alluvium	17000	9350	99.85	51.48	45.92	9.19	36.79	2.49	
96P166	Alluvium	19550	7500	153.54	83.96	50.44	17.65	32.81	19.07	
96P167	Alluvium	17900	8200	73.49	49.19	23.93	8.22	15.71	0.44	
96P168	Alluvium	20500	7250	166.57	104.92	49.78	14.49	35.38	11.83	
96P169	Alluvium	16550	11700	113.87	61.42	48.97	12.8	36.01	3.54	
96P170	Alluvium	14700	5950	87.52	57.54	28.46	12.34	15.99	1.19	
96P171	Alluvium	17650	4900	148.14	100.64	29.62	9.84	19.61	18.04	
96P172	Alluvium	18500	3350	93.21	60.68	28.34	12.87	15.42	4.20	
96P173	Alluvium	14450	4250	67.65	37.59	27.95	4.87	22.96	2.31	
96P174	Till	20200	4200	181.44	142.28	38.45	14.13	24.25	0.74	
96P175	Alluvium	14000	9400	135.25	56.65	59.25	24.93	34.28	19.55	
96P176	Alluvium	17800	6900	169.89	105.62	63.33	19.51	43.80	0.73	
96P177	Alluvium	15950	6200	134.17	76.71	52.05	16.71	35.23	5.80	
96P178	Alluvium	20800	5750	143.99	92.21	47.06	16.72	30.25	4.60	
96P179	Alluvium	12550	6200	150.40	58.9	81.03	13.16	67.76	10.58	
96P180	Alluvium	19550	6300	139.74	57.6	64.18	42.64	21.59	18.03	
96P181	Alluvium	15600	10800	133.82	62.79	51.84	19.81	31.97	19.27	
96P182	Alluvium	27100	7900	362.22	174.33	113.45	85.03	28.45	74.45	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P183	Alluvium	21150	6200	392.58	180.84	119.32	75.11	44.34	92.48	
96P184	Alluvium	16500	6800	94.76	38.62	32.72	15.48	17.08	23.55	
96P185	Alluvium	18200	6900	130.91	73.61	47.49	21.08	26.21	9.87	
96P186	Alluvium	20400	5800	275.82	147.78	57.21	8.76	48.32	70.28	
96P187	Alluvium	23550	11900	190.34	59.21	124.44	58.5	65.87	6.22	
96P188	Alluvium	6550	5450	41.9	21.87	19.62	2.76	16.74	0.91	
96P189	Alluvium	22300	9600	119.34	74.17	42.99	20.64	22.20	2.25	
96P190	Alluvium	14250	5400	78.33	57.1	19.38	7.08	12.14	1.86	
96P191	Alluvium	17600	7950	58.94	33.33	22.38	11.9	10.38	3.28	
96P192	Alluvium	18250	8800	62.06	27	30.16	16.08	13.87	5.09	
96P193	Alluvium	16950	5400	76.28	39.67	30.03	16.68	13.21	6.74	
96P194	Alluvium	10300	6400	55.94	35.25	17.36	11.65	5.57	3.45	
96P195	Alluvium	21600	9800	265.9	153.49	71.81	38.51	33.22	40.69	
96P196	Alluvium	17100	6200	207.68	108.44	79.57	57.8	21.78	19.89	
96P197	Alluvium	17900	7100	169.13	74.96	66.82	35.19	31.49	27.54	
96P198	Alluvium	21400	7950	157.08	94.82	47.22	10.9	36.20	15.27	
96P199	Alluvium	18400	6350	196.39	102.31	70.51	23.02	47.27	23.84	
96P200	Alluvium	17600	7600	65.71	39.67	22	8.2	13.58	4.23	
96P201	Alluvium	18900	10600	133.6	76.77	48.19	14.15	33.93	8.81	
96P202	Alluvium	21250	5850	141.22	101.79	33.28	13.18	19.97	6.23	
96P203	Till	24600	6450	201.48	118.84	59.86	22.86	36.88	23.00	
96P204	Till	22250	7350	153.16	90.93	52.8	21.03	62.99	9.63	
96P205	Alluvium	17950	10600	60.12	30.41	26.35	12.62	26.38	3.60	
96P206	Till	22550	2650	132.83	76.29	35.7	12.57	22.90	20.78	
96P207	Alluvium	26700	13550	180.42	109.58	36.36	9.87	13.54	34.45	
96P208	Alluvium	22100	9400	288.74	135.98	112.93	49.8	31.62	39.72	
96P209	Alluvium	15650	4600	266.93	144.22	105.31	63.45	42.04	17.78	
96P210	Alluvium	13050	8350	85.91	44.97	36.22	9.73	26.29	4.82	
96P211	Alluvium	18650	8650	87.73	43.1	39.36	14.8	24.47	5.32	
96P212	Alluvium	19550	6550	227.34	107.75	62.84	20.89	41.89	56.43	
96P213	Alluvium	16350	4500	113.42	64.28	47.89	17.79	29.91	1.26	
96P214	Alluvium	21000	8000	190.06	100.25	52.01	19.89	32.02	37.86	
96P215	Alluvium	16650	7950	88.28	48.74	38.99	15.85	22.89	0.63	
96P216	Till	19000	4750	181.81	124.4	57.17	13.22	43.81	0.11	
96P217	Till	20900	7800	253.72	121.84	87.63	38.52	49.02	44.17	
96P218	Alluvium	21050	12450	114.41	79.05	31.46	16.91	14.39	4.02	
96P219	Till	17500	10250	138.25	94.66	33.71	12.27	21.31	9.97	
96P220	Alluvium	19850	10750	153.44	83.15	43.46	20.8	22.53	26.87	
96P221	Till	13250	5000	206.84	124.87	77.46	12.64	64.62	4.51	
96P222	Till	19400	0	171.46	126.74	44.35	9.42	34.81	0.05	No >1.77mm.
96P223	Alluvium	17950	5800	106.02	65.3	35.92	13.46	22.28	4.86	
96P224	Alluvium	18100	7450	83.43	44.82	34.86	14.72	20.15	3.96	
96P225	Alluvium	21950	11950	148.63	85.86	51.78	9.7	42.04	11.06	
96P226	Alluvium	21400	7550	213.15	107.29	74.47	26.57	48.28	31.55	
96P227	Alluvium	19000	8900	131.39	50.3	64.73	22.25	42.84	16.45	
96P228	Alluvium	19650	7750	59.95	43.41	14.21	3.17	11.05	2.50	
96P229	Alluvium	13300	1800	107.57	73.03	22.76	3.89	18.80	12.00	
96P230	Alluvium	22500	8300	272.11	134.46	94.46	36.77	57.71	43.32	
96P231	Alluvium	22450	3750	329.47	154.15	125.46	55.15	70.24	50.23	
96P232	Alluvium	19600	5250	256.24	116.53	97.81	39.53	58.32	41.95	
96P233	Alluvium	24800	6300	357.59	176.82	94.37	39.13	55.21	86.09	
96P234	Alluvium	17050	7000	231.25	110.29	90.2	34.44	55.66	30.70	
96P235	Alluvium	19450	9550	245.32	89	122.63	71.08	51.99	33.77	
96P236	Alluvium	23950	8300	160.15	95.99	48.63	6.09	42.42	15.73	
96P237	Alluvium	19000	10000	157.45	64.55	74.37	26.31	47.93	18.69	
96P238	Alluvium	25400	5750	157.22	64.39	64.63	42.74	21.78	28.38	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P239	Alluvium	20450	7550	248.82	125.07	56	18.7	37.29	67.68	
96P240	Alluvium	10600	5700	173.96	68.42	77.98	22.03	55.83	27.80	
96P241	Alluvium	19900	9800	176.05	99.36	57.14	18.04	38.89	19.74	
96P242	Alluvium	20200	7900	206.26	114.5	61.22	24.67	36.48	30.58	
96P243	Alluvium	26150	8500	417.76	230.91	109.18	34.51	74.65	77.93	
96P244	Alluvium	20150	5400	286.09	160.75	97.15	33.54	63.56	28.34	
96P245	Alluvium	19200	9150	153.69	98.9	41.01	12.06	28.93	13.76	
96P246	Alluvium	16650	4650	266.13	146.47	77.08	46.95	29.97	42.43	
96P247	Alluvium	16350	5250	234.54	110.29	91.91	49.34	42.47	32.50	
96P248	Alluvium	4800	2200	44.84	24.32	16.65	5.26	11.29	4.04	
96P249	Alluvium	14200	9800	104.08	47.64	48.79	17.27	31.52	7.81	
96P250	Alluvium	16750	4350	315.71	160.43	89.26	31.6	57.78	66.27	
96P251	Till	18350	2450	176.75	94.27	65.65	28.57	37.14	16.92	
96P252	Alluvium	16250	7400	122.39	83.24	22.41	12.44	9.99	16.77	
96P253	Alluvium	15200	8500	200.68	81.38	83.61	39.14	44.69	35.88	
96P254	Alluvium	19500	13800	61.45	34.81	23.51	7.21	16.15	3.27	
96P255	Alluvium	14550	4500	292.83	152.14	97.73	28.29	69.25	43.13	
96P256	Alluvium	18500	9100	249.75	83.42	123.32	83.96	39.43	42.98	
96P257	Alluvium	22150	9950	167.64	94.12	54.75	18.7	35.94	18.76	
96P258	Till	13400	6500	152.99	71.51	50.52	24.5	25.99	30.85	
96P259	Till	19000	3850	165.68	85.16	79.59	33.6	45.75	0.96	
96P260	Alluvium	17750	8400	36.25	7.64	28.57	1.25	27.19	0.08	
96P261	Alluvium	24150	8350	373.26	176.95	96.28	39.54	56.64	100.07	
96P262	Alluvium	21900	8300	183.25	130.69	41.33	6.47	34.66	11.18	
96P263	Alluvium	24600	19150	109.47	69.23	36.41	7.18	29.11	3.90	
96P264	Alluvium	16600	5900	134.44	75.19	51.74	13.58	38.03	7.62	
96P265	Alluvium	20900	8550	201.81	110.24	57.05	16.84	40.06	34.51	
96P266	Alluvium	17550	6650	170.78	94.45	47.26	26.13	21.00	29.02	
96P267	Till	14750	7500	100.72	55.54	26.66	10.04	16.50	18.60	Till.
96P268	Glaciofluvial	28100	14450	153.49	84.6	43.89	8.62	35.11	25.18	
96P269	Glaciofluvial	21850	17500	43.04	22.61	14.83	2.83	12.04	5.67	
96P270	Glaciofluvial	23450	16400	78.77	42.69	23.77	6.01	17.55	12.52	
96P271	Glaciofluvial	23850	17750	46.75	33.97	7.36	1.01	6.20	5.55	
96P272	Glaciofluvial	21750	3800	71.71	50.36	14.64	1.32	13.15	6.82	
96P273	Glaciofluvial	22700	10000	123.34	76.31	25.68	7.1	18.50	21.48	
96P274	Glaciofluvial	24600	7300	63.9	39..13	12.33	5.04	7.20	12.54	
96P275	Glaciofluvial	22000	1000	140.17	98.84	28.17	7.87	20.25	13.24	Brown silty sand.
96P276	Till	16250	1800	110.85	69.09	28.88	6.75	22.09	12.91	
96P277	Till	19850	5250	162.07	99.38	56.57	25.57	31.10	6.13	
96P278	Glaciofluvial	28200	10450	74.57	45.96	14.5	6.96	7.68	14.08	
96P279	Glaciofluvial	28700	14150	83.86	36.54	32.06	11.77	20.27	15.42	Brown silty sand.
96P280	Glaciofluvial	23850	10250	92.66	61.89	20.6	4.27	16.31	10.31	Brown silty sand.
96P281	Glaciofluvial	27300	0	128.43	69.52	40.59	10.85	29.58	18.40	Brown silty sand.
96P282	Glaciofluvial	25700	0	291.89	225.89	14.57	2.15	12.28	51.66	Brown silty sand.
96P283	Till	21500	5450	140.38	92.14	32.11	9.69	22.26	16.19	Till.
96P284	Glaciofluvial	32150	0	271.19	202.39	30.85	5.94	24.81	38.20	Brown silty sand.
96P285	Glaciofluvial	22850	1800	195.93	136.78	19.87	2.56	17.16	39.36	Brown silty sand.
96P286	Till	36350	4500	73.77	46.02	16.33	4.29	11.71	11.63	Till.
96P287	Till	21500	3750	145.48	86.34	53.25	14.85	38.33	5.91	
96P288	Till	7750	2500	71.46	45.87	14.83	5.29	9.31	10.92	
96P289	Alluvium	11550	8400	50.21	29.99	19.6	4.81	14.65	0.73	
96P290	Till	17600	0	121.27	119.56	0.21	0.02	0.19	1.47	Brown silty sand.
96P291	Till	18250	600	56.88	38.71	16.6	3.2	13.12	1.72	
96P292	Till	13950	3150	171.55	118.08	44.28	10.91	33.42	9.16	
96P293	Alluvium	21650	7700	104.33	58.3	34.95	13.83	21.12	11.15	
96P294	Alluvium	22450	10250	136.97	46.32	68.69	35.71	33.08	21.95	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96P295	Alluvium	16200	5350	120.34	62.36	46.8	12.7	34.18	11.38	
96P296	Alluvium	13250	6050	72.67	38.56	26.81	7.97	18.79	7.39	
96P297	Alluvium	19400	6150	225.57	115.78	68.83	33.02	36.12	40.91	
96P298	Alluvium	23650	9150	275.47	116.58	88.23	62.4	26.53	70.44	
96P299	Alluvium	19650	5600	195.26	102.34	44.55	25.53	19.17	48.60	
96P300	Alluvium	17150	10000	296.93	98.51	119.44	68.47	51.89	79.13	
96P301	Alluvium	19650	6200	105.24	66.96	15.32	4.79	10.36	23.01	
96P302	Alluvium	15100	5350	177.96	78.28	70.76	25.88	44.67	28.92	
96P303	Alluvium	23750	6700	83.35	44.88	24.61	13.88	10.45	14.10	
96P304	Alluvium	20250	7250	161.51	99.15	41.9	13.08	28.61	20.63	
96P305	Alluvium	20600	10100	183.61	70.63	79.58	45.79	33.62	33.45	
96P306	Alluvium	23700	4450	162.05	87.46	42.34	16.73	25.40	32.41	
96P307	Alluvium	18950	8200	84.54	55.15	15.17	7.13	7.84	14.35	
96P308	Alluvium	21000	9200	174.48	99.29	46.21	29.9	16.07	29.06	
96P309	Alluvium	21650	14350	158.15	55.86	74.87	44.88	29.72	27.55	
96P310	Alluvium	24450	12550	224.38	85.1	105.24	46.33	58.74	34.16	
96P311	Till	24700	900	87.24	58.96	20.6	3.15	17.15	7.87	Till.
96P312	Till	23200	6450	208.72	118.03	78.39	21.19	56.86	12.37	
96P313	Till	27600	3750	144.89	84.46	52.82	10.17	42.37	7.40	No pebbbles in the >1.7 mm.
96P314	Till	25150	6950	19.21	7.06	9.74	2.74	6.71	2.36	
96P315	Till	21250	6550	98.6	67.97	16.99	5.96	10.75	13.85	Till.
96R001	Alluvium	17550	9500	278.26	96.45	133.12	76.13	57.86	48.33	
96R002	Alluvium	18150	6300	338.01	192.01	105.30	48.37	57.15	40.00	
96R003	Alluvium	16675	5900	242.85	85.51	124.17	44.52	79.98	32.95	
96R004	Alluvium	20400	7450	209.88	84.98	70.63	40.61	29.23	54.44	
96R005	Alluvium	18950	6500	107.83	77.50	17.97	6.12	11.98	12.42	
96R006	Alluvium	17300	7100	192.94	123.50	41.41	17.92	23.63	27.89	
96R007	Alluvium	18800	7500	200.65	132.33	45.74	17.37	28.50	22.31	
96R008	Alluvium	18700	4600	149.22	107.00	21.63	6.88	14.91	20.99	
96R009	Alluvium	19075	6800	262.85	137.01	96.17	46.60	50.00	29.94	
96R010	Alluvium	18250	6000	157.04	112.13	30.72	14.85	16.01	14.28	
96R011	Alluvium	19350	5600	172.51	93.50	47.15	30.46	16.82	31.90	
96R012	Alluvium	18600	5200	256.86	127.61	75.33	55.99	19.82	53.38	
96R013	Alluvium	18950	6700	173.10	111.86	43.52	23.30	20.73	17.57	
96R014	Alluvium	18850	9400	178.06	132.76	31.61	17.55	14.22	13.74	
96R015	Alluvium	15250	6200	179.70	114.89	51.17	31.20	20.30	13.82	
96R016	Alluvium	15700	14000	70.01	40.86	28.72	1.64	27.31	0.63	
96R017	Alluvium	14750	4200	157.26	111.99	43.52	15.73	27.98	1.55	
96R018	Alluvium	15975	850	98.13	73.53	24.66	1.51	23.29	0.35	
96R019	Alluvium	16550	6500	91.10	73.00	14.30	4.19	10.19	4.00	
96R020	Alluvium	17900	9400	92.48	60.46	27.10	6.50	20.69	5.10	
96R021	Alluvium	15350	3300	207.00	173.86	32.65	9.53	23.17	0.12	
96R022	Alluvium	11600	3900	128.41	98.73	29.28	6.07	23.25	0.29	
96R023	Alluvium	16200	7000	100.40	84.36	12.08	2.82	9.31	3.91	
96R024	Alluvium	16350	7600	136.99	103.96	19.72	7.92	11.86	13.22	
96R025	Alluvium	18850	9400	132.96	63.82	59.36	24.23	35.18	9.67	
96R026	Alluvium	17550	7900	208.92	126.87	40.47	25.97	14.67	41.18	
96R027	Alluvium	14850	5500	128.93	86.71	31.84	9.88	22.21	10.43	
96R028	Alluvium	19150	7900	140.06	106.15	19.43	11.65	7.96	14.29	
96R029	Alluvium	16250	10100	215.60	93.31	87.74	50.07	38.07	34.29	
96R030	Alluvium	18350	8400	125.94	86.15	33.54	7.18	26.59	6.26	
96R031	Alluvium	19400	9100	143.40	81.73	41.92	21.46	20.46	19.57	
96R032	Alluvium	17750	9300	76.93	53.47	12.41	6.87	5.49	11.10	
96R033	Glaciofluvial	12800	4700	65.53	37.10	25.84	2.94	22.80	2.41	
96R034	Alluvium	18200	3300	161.40	113.09	31.62	5.83	25.77	16.47	
96R035	Alluvium	18100	4100	154.69	107.57	40.56	12.34	28.16	6.53	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R036	Alluvium	17000	8700	172.90	93.30	51.06	29.57	21.58	28.51	
96R037	Alluvium	17150	4900	207.21	143.18	28.42	17.40	11.02	35.66	
96R038	Alluvium	19300	7000	198.14	94.43	63.76	48.33	15.37	40.08	
96R039	Alluvium	20300	8300	219.47	124.62	69.04	37.37	32.00	26.11	
96R040	Alluvium	16750	8200	134.21	84.67	43.31	14.25	29.06	6.40	
96R041	Alluvium	19850	6000	82.71	72.69	8.26	1.73	6.54	1.96	
96R042	Alluvium	14450	450	134.54	101.04	22.64	6.41	16.23	10.97	44.89 g of -80mesh (<177µ) removed from <250µm. *
96R043	Alluvium	13650	------	64.82	56.83	4.21	1.08	2.68	3.78	45.45 g of -80mesh removed from <250µm. Pebbles (> 1.77mm) were not kept.
96R044	Alluvium	20100	9600	164.56	99.30	53.53	13.03	40.48	11.79	
96R045	Alluvium	20400	2400	106.09	76.65	27.98	1.34	26.95	1.40	
96R046	Alluvium	14850	4200	108.72	85.05	18.97	3.69	14.89	5.17	Many carbonate fragments at table and in >1.7mm.
96R047	Alluvium	21550	8300	187.58	119.12	49.83	24.91	25.25	18.28	
96R048	Alluvium	20100	10250	90.41	59.43	28.21	15.52	12.95	2.74	
96R049	Alluvium	19500	12750	66.72	40.84	24.57	2.10	22.55	1.44	25.18 g of -80mesh removed from <250µm.
96R050	Alluvium	16500	8750	132.69	82.63	48.53	12.31	36.33	1.51	40.69 g of -80mesh removed from <250µm.
96R051	Alluvium	19150	8700	149.57	93.33	41.39	18.38	23.11	14.87	58.29 g of -80mesh removed from <250µm.
96R052	Alluvium	22150	6750	168.31	121.37	31.95	11.71	20.31	15.14	53.58 g of -80mesh removed from <250µm. Table feed and >1.7mm rich in carbonates.
96R053	Alluvium	20750	675	158.11	141.54	15.44	2.52	13.04	1.22	52.86 g of -80mesh removed from <250µm. Table feed and >1.7mm rich in carbonates.
96R054	Alluvium	21400	10000	195.60	134.76	46.31	13.38	32.89	14.50	
96R055	Alluvium	15700	10000	96.07	64.71	27.24	6.77	20.11	4.52	
96R056	Till	26700	4600	235.59	187.27	47.57	3.51	43.94	0.85	Till.
96R057	Glaciofluvial	21450	6900	140.53	115.51	17.03	6.00	10.87	8.06	
96R058	Alluvium	15100	7600	153.82	110.74	28.57	10.24	18.53	14.26	
96R059	Alluvium	19150	9900	108.52	58.89	43.58	15.82	27.83	5.94	
96R060	Alluvium	12750	1100	133.84	113.96	17.88	5.66	11.74	2.52	
96R061	Alluvium	14550	6700	146.09	96.06	31.35	15.01	16.43	18.49	
96R062	Alluvium	15500	4700	187.30	142.22	35.04	16.35	19.08	9.36	
96R063	Alluvium	18600	0	146.96	140.96	6.01	0.43	5.68	0.23	>90% of HMC is altered amphiboles. Sample rich in organic material.
96R064	Till	8450	0	72.78	54.08	18.76	0.47	18.39	0.02	>90% of HMC is altered amphiboles. Sample rich in organic material.
96R065	Till	11050	0	10.52	5.16	5.37	0.21	5.32	0.01	>90% of HMC is altered amphiboles. Sample rich in organic material.
96R066	Alluvium	9500	7500	85.55	63.19	16.28	6.50	9.77	6.27	38.10 g of -80mesh removed from <250µm..
96R067	Glaciofluvial	11100	3100	44.94	33.42	10.24	1.78	8.52	1.26	17.24 g of -80mesh removed from <250µm.
96R068	Alluvium	16100	13700	198.69	91.33	50.26	32.68	17.20	56.61	44.84 g of -80mesh removed from <250µm.
96R069	Alluvium	22125	------	174.99	106.28	32.77	22.27	10.31	35.26	52.88 g of -80mesh removed from <250µm. Pebbles (> 1.77mm) were not kept.
96R070	Alluvium	17100	5600	142.53	88.11	33.12	20.93	12.15	20.76	52.10 g of -80mesh removed from <250µm.

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R071	Alluvium	13150	6350	160.39	98.74	44.25	17.84	26.33	17.67	48.76 g of -80mesh removed from <250µm.
96R072	Alluvium	21400	9100	174.09	149.00	20.41	6.08	14.21	4.89	55.96 g of -80mesh removed from <250µm.
96R073	Alluvium	24400	6600	565.54	329.65	93.07	53.87	39.07	142.43	70.82 g of -80mesh removed from <250µm.
96R074	Alluvium	21000	6000	317.80	208.18	42.97	20.19	22.89	65.78	71.16 g of -80mesh removed from <250µm.
96R075	Alluvium	23750	9250	197.03	115.64	33.96	22.05	12.05	47.00	59.39 g of -80mesh removed from <250µm.
96R076	Alluvium	20200	2200	295.88	190.99	39.23	21.92	16.92	65.15	65.83 g of -80mesh removed from <250µm.
96R077	Alluvium	14000	7750	160.93	120.99	37.29	5.75	31.20	3.20	51.06 g of -80mesh removed from <250µm.
96R078	Alluvium	24100	12900	503.79	138.59	202.24	160.63	41.75	162.51	48.95 g of -80mesh removed from <250µm.
96R079	Alluvium	20500	10700	258.92	107.81	91.78	57.58	34.19	59.56	55.61 g of -80mesh removed from <250µm.
96R080	Alluvium	27100	12950	833.42	478.26	82.95	42.77	40.06	271.41	78.57 g of -80mesh removed from <250µm.
96R081	Alluvium	21650	4850	312.78	182.85	62.92	31.87	31.10	67.56	65.60 g of -80mesh removed from <250µm.
96R082	Alluvium	21100	7750	71.64	55.30	13.30	1.84	11.51	3.30	39.63 g of -80mesh removed from <250µm.
96R083	Alluvium	16000	4500	89.07	64.36	10.67	4.29	6.41	14.23	46.42 g of -80mesh removed from <250µm.
96R084	Alluvium	20300	7000	342.89	155.76	115.57	65.92	49.73	71.51	53.96 g of -80mesh removed from <250µm.
96R085	Alluvium	15000	9400	161.23	57.36	90.08	37.94	52.51	13.60	27.46 g of -80mesh removed from <250µm.
96R086	Alluvium	15975	-------	264.14	142.16	94.30	57.10	36.93	28.38	51.08 g of -80mesh removed from <250µm. Pebbles (> 1.77mm) were not kept.
96R087	Alluvium	14950	-------	117.25	76.92	33.90	8.77	25.05	7.06	48.50 g of -80mesh removed from <250µm. Pebbles (> 1.77mm) were not kept.
96R088	Alluvium	17150	4850	138.88	107.13	22.68	11.26	11.51	9.24	76.41 g of -80mesh removed from <250µm.
96R089	Alluvium	14150	3750	123.48	68.84	50.60	29.91	20.76	4.09	
96R090	Alluvium	14650	7050	91.80	68.96	14.70	7.44	7.25	8.31	
96R091	Alluvium	25300	4700	148.21	113.97	29.94	10.95	19.05	4.42	No Al tag in bag.
96R092	Alluvium	12200	5450	119.46	79.86	37.71	16.36	21.40	2.05	
96R093	Alluvium	18900	4700	84.85	64.97	18.79	10.78	8.08	1.33	
96R094	Alluvium	11000	4050	171.28	118.76	46.92	9.98	37.35	5.62	
96R095	Alluvium	14500	2600	88.08	66.56	20.28	6.98	13.46	1.50	
96R096	Alluvium	17250	9200	70.65	60.91	5.85	1.44	4.47	3.80	
96R097	Alluvium	14250	4550	108.94	81.13	24.02	8.38	15.74	3.78	
96R098	Alluvium	16300	5250	120.24	81.61	37.82	11.31	26.54	1.01	
96R099	Alluvium	13250	6700	112.31	71.98	20.63	14.85	5.83	19.88	
96R100	Alluvium	19150	4000	373.96	231.16	119.80	54.59	65.13	22.82	
96R101	Alluvium	25500	4600	136.22	66.27	44.80	26.81	18.02	25.16	
96R102	Alluvium	13250	3600	54.24	41.22	11.52	1.92	9.57	1.55	
96R103	Alluvium	18600	750	95.22	75.08	17.94	8.91	9.10	2.15	
96R104	Alluvium	16000	10250	102.99	70.73	28.50	8.66	19.89	3.78	
96R105	Alluvium	20050	4150	94.40	69.31	20.49	8.82	11.69	4.60	
96R106	Alluvium	17250	7200	106.34	79.65	10.65	6.59	4.07	15.96	Carbonate lithic fragments in >1.7mm .
96R107	Alluvium	16800	5300	108.49	78.96	19.07	10.39	8.71	10.38	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R108	Alluvium	21700	9900	88.98	69.86	12.01	3.94	8.12	7.14	Carbonate lithic fragments in >1.7mm .
96R109	Alluvium	15000	1300	107.66	77.50	18.01	6.60	10.98	12.07	
96R110	Glaciofluvial	20700	5150	111.24	84.50	19.30	8.85	10.52	7.38	
96R111	Alluvium	18850	7050	195.60	74.62	73.65	57.47	16.34	47.15	
96R112	Alluvium	17250	7200	202.80	72.67	94.57	73.44	21.55	35.61	
96R113	Alluvium	17600	5250	123.39	83.60	31.60	20.70	11.07	8.23	
96R114	Alluvium	17000	3450	120.49	103.52	5.93	1.69	4.36	11.09	
96R115	Alluvium	20200	4400	91.27	69.80	6.28	2.09	4.31	15.26	
96R116	Alluvium	20000	15000	87.75	45.77	22.82	12.67	10.12	19.09	
96R117	Alluvium	18900	8750	97.31	70.30	23.41	10.23	13.08	3.54	
96R118	Alluvium	18800	7650	108.72	77.72	28.77	18.34	10.37	2.37	
96R119	Alluvium	15600	3400	147.08	103.85	17.27	9.00	8.20	25.92	
96R120	Alluvium	15500	5850	135.13	99.10	23.57	16.98	6.54	12.46	
96R121	Alluvium	16250	6900	108.92	66.55	30.61	13.02	17.57	11.74	
96R122	Alluvium	19200	13000	72.10	48.21	21.78	7.89	13.87	2.12	
96R123	Glaciofluvial	19400	7200	100.61	82.52	16.03	6.56	9.46	2.06	
96R124	Alluvium	17700	6900	113.42	88.50	24.33	7.53	16.75	0.56	
96R125	Alluvium	16500	6600	55.96	44.74	10.43	5.64	4.78	0.76	
96R126	Alluvium	17100	9500	85.83	59.08	26.08	9.94	16.08	0.66	
96R127	Till	19200	1500	77.36	63.13	12.05	3.71	8.13	2.17	
96R128	Till	14700	5400	81.58	74.98	5.48	1.63	3.83	1.04	
96R129	Till	10400	-------	40.01	32.44	1.67	0.42	1.24	5.85	Pebbles (>1.7mm) were not kept.
96R130	Till	11350	6000	64.77	57.80	6.61	2.76	3.86	0.37	
96R131	Alluvium	12450	2100	39.58	33.90	5.40	1.60	3.77	0.28	
96R132	Alluvium	18700	5250	119.25	79.67	24.13	14.34	9.70	15.40	
96R133	Alluvium	12650	4000	58.19	45.72	10.96	5.38	5.54	1.50	
96R134	Alluvium	13650	4700	73.35	56.86	14.97	4.98	10.05	1.48	
96R135	Till	14350	2300	30.47	28.78	1.23	0.53	0.67	0.42	Till
96R136	Alluvium	13600	6900	88.93	55.25	18.60	10.53	8.06	14.90	
96R137	Alluvium	15950	10750	201.88	127.27	53.74	11.12	42.55	20.77	
96R138	Alluvium	17550	7200	141.27	73.24	53.63	24.74	28.87	14.37	
96R139	Alluvium	20500	6550	79.36	56.24	14.71	6.11	8.63	8.45	
96R140	Alluvium	15150	6600	130.41	53.47	41.08	20.61	20.45	35.85	
96R141	Alluvium	14900	4000	70.23	54.90	11.00	2.71	8.15	4.43	
96R142	Alluvium	20200	10000	234.87	104.14	80.24	58.41	21.73	50.50	
96R143	Alluvium	20100	7500	178.98	89.20	53.77	26.18	27.52	35.99	
96R144	Alluvium	19300	6450	107.39	65.58	27.50	9.99	17.33	14.54	
96R145	Alluvium	17900	7200	159.88	77.80	56.51	35.62	20.74	25.56	
96R146	Alluvium	16600	4400	145.18	108.72	29.68	14.95	14.64	6.89	
96R147	Alluvium	19600	12700	97.63	57.80	32.50	14.15	18.19	7.37	
96R148	Alluvium	18450	8250	184.32	72.25	61.81	34.14	27.56	50.16	
96R149	Alluvium	16500	7650	63.51	40.66	19.23	5.62	13.43	3.90	
96R150	Alluvium	18500	6900	51.16	26.05	23.76	7.00	16.65	1.26	
96R151	Alluvium	21000	7800	83.46	53.10	26.56	10.26	16.12	3.93	
96R152	Alluvium	11600	5500	98.88	62.76	25.42	12.86	12.50	10.80	
96R153	Alluvium	14200	6700	84.08	60.58	15.48	7.16	8.27	8.10	
96R154	Alluvium	15000	6400	96.97	69.71	26.89	14.22	12.63	0.40	
96R155	Alluvium	19100	9250	123.27	54.67	61.51	26.40	34.47	6.89	
96R156	Alluvium	14500	4400	56.07	29.04	26.35	6.19	20.12	0.59	
96R157	Alluvium	20500	13500	140.94	57.91	76.77	23.44	52.76	6.27	
96R158	Till	15650	3300	145.20	36.35	107.39	9.06	26.94	1.08	
96R159	Till	20950	2450	219.04	35.86	176.24	13.52	22.12	39.40	Carbonate lithic fragments in >1.7mm.
96R160	Alluvium	15450	2050	127.37	32.07	94.41	12.32	19.40	1.32	
96R161	Alluvium	13100	6000	86.86	44.76	35.48	20.70	14.49	41.89	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R162	Alluvium	20000	7700	122.63	67.70	54.06	36.71	16.89	13.43	
96R163	Alluvium	16150	5700	112.14	53.49	19.16	4.52	14.4	2.20	
96R164	Alluvium	17850	7300	72.71	46.47	25.46	10.29	15.03	0.89	
96R165	Till	22100	4250	114.37	88.81	19.35	9.09	10.06	6.17	
96R166	Alluvium	16750	7950	135.59	71.18	53.22	15.60	37.28	11.12	
96R167	Till	17050	800	55.81	41.63	10.45	1.58	8.91	3.64	Till
96R168	Till	18450	4800	78.98	61.21	10.46	1.91	8.44	7.37	Till
96R169	Alluvium	18700	10000	139.41	79.90	42.15	15.83	26.29	17.34	
96R170	Alluvium	18000	17250	83.53	46.08	28.06	15.92	11.98	8.49	
96R171	Alluvium	21750	10750	101.48	39.59	51.48	30.82	20.48	10.46	
96R172	Alluvium	20950	11800	110.48	46.23	42.96	30.29	12.47	21.40	
96R173	Alluvium	19800	9950	124.14	59.88	40.51	32.11	8.3	23.78	
96R174	Alluvium	19750	12500	99.11	44.38	30.20	18.38	11.72	24.45	
96R175	Alluvium	19450	1700	429.78	347.70	36.59	15.75	20.6	45.83	
96R176	Alluvium	21850	4800	249.62	147.40	21.96	9.23	12.66	80.06	No Al tag in bag.
96R177	Alluvium	15850	3200	246.49	129.68	89.87	45.33	44.43	26.77	
96R178	Alluvium	13700	5750	73.34	30.86	32.28	23.61	8.48	9.99	
96R179	Alluvium	19150	2700	55.05	31.05	20.70	8.36	11.99	3.53	
96R180	Alluvium	14300	3900	106.04	70.67	26.96	6.41	20.39	8.40	
96R181	Alluvium	18750	8700	94.70	57.35	34.50	12.43	21.73	2.96	
96R182	Alluvium	19500	9500	143.34	63.87	56.40	38.02	18.16	23.10	
96R183	Alluvium	15850	1200	243.05	149.49	54.09	17.05	37.01	42.19	
96R184	Alluvium	18750	7600	220.43	102.52	102.52	66.79	35.74	15.45	
96R185	Alluvium	22650	8150	203.74	129.00	48.97	24.70	24.23	25.77	
96R186	Alluvium	18800	7250	272.49	129.44	92.18	53.09	39.11	51.11	
96R187	Alluvium	15200	2900	209.11	101.54	47.91	24.62	23.32	59.71	
96R188	Alluvium	13200	7850	135.10	65.11	56.81	28.74	27.98	13.24	
96R189	Alluvium	14000	3900	174.58	96.37	71.37	26.72	44.55	6.85	
96R190	Alluvium	20850	8100	152.57	117.14	34.79	14.29	20.44	0.69	
96R191	Till	21050	6300	94.40	65.97	24.76	4.66	19.98	3.69	
96R192	Alluvium	21700	3000	468.38	212.92	225.40	76.38	148.84	53.22	
96R193	Alluvium	15050	1800	138.53	84.15	40.65	14.94	25.69	14.78	Rich in organic matter.
96R194	Alluvium	17300	2100	125.31	86.76	24.26	10.05	14.18	14.41	
96R195	Till	16450	2400	112.82	78.72	18.32	4.37	13.89	15.78	
96R196	Till	17950	6150	62.92	46.66	13.33	4.32	9.02	3.00	
96R197	Till	21250	9100	100.07	79.15	20.11	3.64	16.44	0.82	
96R198	Till	20750	11100	72.05	35.74	35.81	7.41	28.4	0.35	
96R199	Alluvium	19150	4150	101.78	59.96	31.46	14.55	16.91	10.47	
96R200	Alluvium	16000	6950	149.01	76.26	55.45	25.84	29.56	17.31	
96R201	Alluvium	17650	3450	149.62	97.10	37.11	22.51	14.53	15.38	
96R202	Alluvium	15750	5250	165.00	77.45	63.34	35.61	27.72	24.24	
96R203	Till	19000	2150	35.70	28.25	3.64	1.02	2.55	3.87	Till
96R204	Alluvium	12350	8700	26.13	14.16	8.59	4.11	4.43	3.38	Very little heavy minerals at table.
96R205	Alluvium	19400	7550	210.14	133.60	68.37	16.34	51.92	7.88	
96R206	Alluvium	15500	2500	137.08	94.93	29.68	7.30	22.26	12.52	
96R207	Alluvium	15900	6650	207.02	128.49	66.86	12.50	54.34	11.49	
96R208	Alluvium	17950	6500	71.78	52.28	18.29	7.97	10.09	1.23	
96R209	Alluvium	13300	10300	66.59	37.45	26.73	8.80	17.68	2.47	
96R210	Alluvium	19200	83000	115.97	63.13	32.61	13.99	18.41	20.17	
96R211	Alluvium	21950	14600	78.54	43.89	26.24	8.93	17.02	8.49	Many small mollusc shells in >1.7mm.
96R212	Alluvium	21000	13750	87.46	56.45	24.48	13.07	11.12	6.44	
96R213	Alluvium	18250	1350	236.97	189.05	47.52	3.32	43.89	0.64	
96R214	Till	20400	4400	234.74	192.37	41.63	16.74	24.71	0.57	
96R215	Till	15900	3700	284.83	203.81	74.06	21.61	51.04	7.03	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R216	Alluvium	13400	3900	104.65	81.86	22.63	11.16	11.3	0.32	
96R217	Alluvium	15950	5450	110.37	82.36	23.47	11.67	11.65	4.45	
96R218	Alluvium	21200	14450	146.51	83.33	48.21	18.45	29.59	14.93	
96R219	Alluvium	21050	9800	158.54	70.64	49.21	37.7	11.41	38.67	
96R220	Alluvium	8250	3350	104.69	52.69	41.15	16.01	25.08	10.91	
96R221	Alluvium	26400	13750	123.56	46.70	48.23	35.09	13.03	28.74	
96R222	Alluvium	19200	3300	245.69	141.35	50.25	20.41	29.67	54.16	
96R223	Alluvium	18550	4700	91.16	54.13	23.22	9.65	13.56	13.97	
96R224	Alluvium	19750	1650	205.94	148.26	33.75	16.47	17.22	23.97	
96R225	Alluvium	17600	8700	125.14	61.67	46.28	17.20	28.99	17.28	
96R226	Alluvium	14550	4500	163.43	90.40	51.38	33.61	17.73	21.60	
96R227	Alluvium	16000	200	177.68	159.33	3.64	1.33	2.28	14.64	Only organics in >1.7mm.
96R228	Alluvium	17750	4400	140.77	70.00	55.33	24.27	30.98	15.55	
96R229	Alluvium	19550	4900	122.18	68.02	40.60	19.68	20.87	13.65	
96R230	Alluvium	16000	9300	165.21	107.12	42.10	9.88	32.16	15.97	
96R231	Alluvium	19000	8500	125.25	93.81	19.29	4.80	14.42	12.26	
96R232	Alluvium	18650	5150	315.81	178.34	73.89	37.78	36.1	63.19	
96R233	Alluvium	19750	8700	346.25	134.64	108.31	78.12	30.3	103.38	
96R234	Alluvium	19450	7700	137.51	68.25	48.21	31.29	17.03	21.12	
96R235	Alluvium	20400	4650	332.15	229.16	47.00	21.55	25.47	56.26	
96R236	Alluvium	16600	6950	461.98	172.45	158.61	108.06	51.24	131.07	
96R237	Alluvium	16050	3100	158.19	89.39	37.82	18.59	19.36	30.92	
96R238	Alluvium	16800	1800	112.93	81.90	23.17	12.72	10.52	7.89	
96R239	Alluvium	20500	8600	186.32	108.13	23.61	14.77	8.79	54.57	
96R240	Alluvium	22650	4200	144.27	92.37	17.38	9.64	7.64	34.63	
96R241	Till	20850	5750	146.98	83.58	59.66	14.00	45.62	3.48	
96R242	Alluvium	16000	3600	207.29	128.13	56.32	15.77	40.53	22.92	
96R243	Alluvium	16750	4900	86.99	60.08	19.00	4.48	14.43	8.11	
96R244	Alluvium	16250	5150	182.31	100.34	56.63	21.82	34.72	25.32	
96R245	Till	16150	4250	77.96	14.36	63.91	0.79	62.97	0.29	
96R246	Alluvium	20900	10450	101.03	41.03	43.03	19.46	23.5	17.12	
96R247	Alluvium	16200	6300	128.04	78.03	31.05	15.28	15.67	19.07	
96R248	Till	17200	6900	102.62	65.05	32.21	17.27	14.96	5.29	
96R249	Till	18050	4050	95.75	71.42	20.36	9.90	10.3	4.09	
96R250	Till	13950	8700	244.80	170.06	71.92	22.74	49.15	2.66	
96R251	Alluvium	16650	0	226.10	123.69	50.02	18.21	31.72	53.04	
96R252	Alluvium	24350	10600	339.44	202.16	83.84	41.65	42.03	54.17	
96R253	Alluvium	15950	2650	193.72	129.56	50.46	14.16	36.12	13.98	
96R254	Alluvium	14850	8300	101.05	56.71	28.72	15.30	13.2	15.76	
96R255	Alluvium	21000	5150	260.42	157.21	64.40	25.44	38.86	38.31	
96R256	Till	16750	1450	106.01	72.97	31.98	15.60	16.25	0.91	
96R257	Alluvium	23050	2200	102.61	79.75	13.87	5.71	8.07	9.09	
96R258	Glaciofluvial	17600	0	161.13	132.92	1.24	0.05	1.19	26.75	Nothing in the >1.7mm fraction. Much organic material.
96R259	Glaciofluvial	22500	12650	74.39	58.76	7.91	2.56	5.14	7.84	Rich in organic material.
96R260	Glaciofluvial	20400	14800	76.85	43.69	16.81	3.93	12.81	16.43	
96R261	Glaciofluvial	24550	6800	316.49	189.13	85.23	32.82	52.38	42.08	
96R262	Glaciofluvial	15750	0	245.77	211.10	0.62	0.04	0.53	34.06	Nothing in the >1.7mm fraction. Only organic material
96R263	Glaciofluvial	15750	0	103.13	88.86	3.05	1.11	1.73	11.34	Nothing in the >1.7mm fraction. Only organic material
96R264	Till	18950	0	35.70	27.74	3.23	0.65	2.54	4.77	Nothing in the >1.7mm fraction. Only organic material
96R265	Glaciofluvial	18150	0	281.21	226.82	5.40	1.96	3.37	49.40	Nothing in the >1.7mm fraction. Only organic material
96R266	Glaciofluvial	17600	2650	196.97	143.80	24.18	1.56	22.34	29.06	

Sample	Material	Gross weight (g)	> 1.77mm (g)	Heavies (g)	<250µm (g)	>250µm (g)	>3.2sg (g)	<3.2sg (g)	Magnetic (g)	Comments
				Gravity table			Methylene iodide (3.2s.g.) 250-1700µm			
96R267	Glaciofluvial	19300	0	98.97	47.16	34.60	22.30	12.04	17.27	Nothing in the >1.7mm fraction. Only organic material
96R268	Glaciofluvial	24350	0	339.45	255.90	23.93	5.02	18.79	59.60	
96R269	Till	23850	3850	124.02	73.29	34.39	6.51	27.7	16.39	TILL
96R270	Till	20350	3800	104.61	71.17	16.37	7.08	9.11	17.17	Much organic material.
96R271	Glaciofluvial	18200	0	261.50	186.55	37.89	2.74	35.04	37.33	Nothing in the >1.7mm fraction. Much organic material.
96R272	Glaciofluvial	22600	6900	95.64	44.74	22.95	6.91	15.85	28.05	Much organic material.
96R273	Alluvium	17750	5850	121.20	71.00	46.33	25.94	20.16	3.92	
96R274	Till	18300	750	82.10	62.53	12.86	1.27	11.45	6.77	TILL
96R275	Till	17800	3100	64.49	42.91	15.16	2.25	12.69	6.47	Till, >1.7mm consists of organic material.
96R276	Till	12400	1900	175.16	133.07	38.72	4.81	33.71	3.44	
96R277	Till	16550	3500	119.32	95.31	23.70	8.51	14.87	0.37	
96R278	Till	15250	5200	256.87	178.22	78.40	16.43	61.69	0.54	
96R279	Alluvium	17200	6500	173.47	87.78	66.24	35.96	30.06	19.50	
96R280	Alluvium	16150	4950	153.39	79.03	56.81	16.87	39.75	17.57	
96R281	Alluvium	22100	5750	256.47	133.00	77.79	35.12	42.44	45.88	
96R282	Alluvium	14550	4550	189.58	108.52	55.73	24.52	30.96	25.40	
96R283	Alluvium	20500	11000	95.33	53.39	30.69	14.01	16.59	11.25	
96R284	Alluvium	21300	7800	144.97	82.91	39.96	19.13	20.61	22.10	
96R285	Alluvium	23150	12100	89.63	47.84	24.45	12.94	11.34	17.42	
96R286	Alluvium	20100	9250	196.21	105.87	60.10	30.97	28.94	30.11	
96R287	Alluvium	19000	3700	237.85	117.72	87.75	27.79	59.85	32.47	
96R288	Alluvium	23550	6400	121.88	72.73	27.36	8.88	18.23	22.04	
96R289	Alluvium	19300	5900	179.51	90.55	49.31	27.23	21.93	39.46	
96R290	Alluvium	17850	5150	127.19	74.03	34.59	12.97	21.37	18.81	
96R291	Alluvium	17500	5300	56.24	37.22	15.00	5.34	9.52	4.15	
96R292	Alluvium	15950	7800	216.93	82.28	67.24	43.26	23.84	67.56	
96R293	Alluvium	20000	8150	159.75	91.04	42.36	22.61	19.65	26.40	
96R294	Alluvium	20500	8450	139.64	72.68	42.04	21.56	20.28	25.04	
96R295	Alluvium	20250	7900	161.80	69.58	47.61	33.53	13.94	44.61	
96R296	Alluvium	23050	8650	180.40	103.44	49.02	20.33	28.59	27.94	
96R297	Alluvium	20100	11000	209.30	92.35	85.33	44.18	41.04	31.63	
96R298	Till	9650	3750	168.65	95.26	70.56	5.89	64.46	2.89	
96R299	Till	18600	5400	149.58	98.41	31.37	14.71	16.47	19.89	
96R300	Till	23250	600	91.90	67.78	21.07	3.12	17.82	2.86	No pebbles: >1.7 consists of organic material only.
96R301	Alluvium	19500	2700	149.81	92.24	40.40	9.71	30.57	17.43	
96R302	Till	21400	1050	193.42	131.35	28.88	1.22	27.53	32.87	Much organic material.
96R303	Till	21600	1900	68.10	43.71	15.18	2.52	12.6	9.22	TILL
96R304	Till	19350	2800	201.07	102.39	55.41	14.68	40.59	43.43	TILL
96R305	Till	19300	3500	99.31	69.87	24.78	7.96	16.64	4.77	
96R306	Till	19850	1900	65.79	55.67	9.74	4.64	4.95	0.24	
96R307	Till	20800	5650	136.86	68.30	40.33	7.82	32.37	28.23	Much organic material.
96R308	Glaciofluvial	17100	0	182.04	151.58	6.59	2.20	4.26	23.56	No pebbles. Some organic material in >1.7mm.
96R309	Till	26350	9150	95.35	55.31	26.11	6.10	19.75	13.93	
96R310	Till	18350	17400	19.21	9.65	9.05	0.13	8.87	0.57	Very little heavy minerals.
96R311	Till	12300	4300	118.18	85.23	31.74	10.65	21.07	1.13	

Appendix C

Mineralogy Report by Consorminex Inc.

Notes:

Vial A

GP = garnet grains with G9 or G10 colour
Cr-D = clinopyroxene grains with strong Cr-diopside colour
Ilm2 = Ilmenite grains with appearance like those found in kimberlite; should be probed

Vial B

Low Cr-D = clinopyroxene grains with light Cr-diopside colour; Cr probably low or absent
Gnt und. = undifferentiated orange garnets and unusual garnets
Ilm = ilmenite or chromite grains, may include nigrine, Ti hematite, Mn ilmenite, melanite, rutile etc.
Ilm2 = black grains of particular interest (described in comments column)
Other = indicators ill suited to above catagories and other minerals of interest
Gold = Gold grains removed at table and placed in vials

Comments

MIN = The minerals are listed in order of abundance
UPPER CASE = dominant and abundant minerals
lower case = minor or trace minerals
ORGAR = orange garnet
PKGAR = pink garnet
(<2%rd) = % rounded garnet
EPD = epidote
HBL = hornblende
HEM = hematite
ILM = ilmenite
LCX = leucoxene
DPS = diopside
SPH = titanite
OPX = orthopyroxene
ZIR = zircon

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P001					1					14.71	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm
96P002					2	1				13.63	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P003				2						14.98	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl,ilm
96P004				1						14.67	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P005				no grains selected						14.97	MIN:ORGAR,PKGAR(<1%rd),HEM,hbl,epd,goe.
96P006				5		1				15.6	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P007				1	1	1				14.51	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm,goe
96P008		1			1	1		1		13.93	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm,goe. 1 gahnite.
96P009				5	2	2				17.3	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P010				4		2				15.05	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm.
96P011				no grains selected						14.04	MIN: ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm.
96P012					1	2			1	15.11	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm.1 gold grain in separate vial.
96P013	1			13	3					13.76	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,ilm
96P014				3						11.69	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,kyn.
96P015				3		1		1		15.92	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.1 colourless, euhedral spinel.
96P016				1	1					13.85	MIN:ORGAR,PKGAR(<1%rd),HEM,hbl,goe,epd,ilm
96P017				no grains selected						12.28	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,goe,hbl,kyn
96P018				4						14.51	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,hbl,epd.
96P019					4					13.89	MIN:ORGAR,PKGAR(<5%rd),HEM,hbl,ilm,epd.
96P020		2		3	4	1				8.86	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P021	1			3	1	3				9.1	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm,dps.
96P022				1	1					10.88	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P023				2	6	1				10.06	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm,dps.
96P024					1					9.98	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl.
96P025				1	2					10.12	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,ilm,hbl.
96P026				no grains selected						10.29	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P027				4	1	2				9.24	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96P028					1					10.45	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96P029			1	4						8.49	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm,dps. 1 possible picro-ilmenite in A vial.
96P030					2					9.75	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe.
96P031	1	1		1	1	1				9.39	MIN:ORGAR,PKGAR(<1%rd),EPD,HBLhem,sph.
96P032					1					9.76	MIN:EPD,ORGAR,PKGAR(<1%rd),HBLhem,ilm, sph.
96P033				no grains selected						10.42	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P034				2						10.33	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96P035				2						9.88	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl.
96P036				4	1	2		1		10.49	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl. 1 euhedral chromite.
96P037				no grains selected						10.21	MIN:ORGAR,PKGAR(<1%rd),HEM,hbl,epd,ilm.
96P038				no grains selected						10.22	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epk,hbl.
96P039						2				9.9	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P040				4	1			3		10.63	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl. 2 gahnite, 1grain of ??
96P041				1						11.85	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl.
96P042				3	3					10.37	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,ilm
96P043				7	2					10.79	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,ilm,hbl.
96P044				8	1					10.57	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96P045				5		1				11.54	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,dps.
96P046				2	1			1		10.37	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl. 1 anisotropic pink grain.
96P047				1						10.27	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl.
96P048				4		1				6.02	MIN:HEM,ORGAR,PKGAR(<1%rd),hbl,epd,goe.
96P049	1	1		6				1		8.08	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe. 1 oxide?
96P050				6				1		13.15	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl. 1 olivine.
96P051	1			4						10.25	MIN:ORGAR,PKGAR(<2%rd),HBLhem,epd,ilm.
96P052				3	1					10.13	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,hbl,epd.
96P053	1			2	1	1				10.56	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,hbl,epd.
96P054				12	1	3				9.85	MIN:ORGAR,PKGAR(<2%rd),HEM,hbl,epd,goe.
96P055					2					10.47	MIN:HEM,GOE,ORGAR,PKKGAR(<1%rd),epd,hbl.
96P056		2		6		2		1		10.51	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe. 1 gahnite.

Sample	Cr-D	GP	Ilm2	Low Cr-D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P057	1			1	1	3		1		9.99	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe. 1 gahnite.
96P058		1	1	7		5		2		10.38	MIN:ORGAR,PKGAR(<1%rd),HBL hem,epd,goe, 1 ilmenite in vial A. 1 odd maleable grey mineral, PROBE, 1 sulphide (irredescent)
96P059		1		3	4					10.75	MIN:ORGAR,PKGAR(<1%rd),HBL,epd,hem.
96P060	1	1	1	3						10.19	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm. 1 ilmenite in vial A.
96P061			1		6	1				10.18	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl. 1 ilmenite in vial A.
96P062	2			3	1	1				10.22	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl. Pyrope is "LILAC colour" (these are often G10 pyropes).
96P063				4		2				8.1	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P064				4	1	1				10.51	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,hbl,sph, goe.
96P065				no grains selected						1.74	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm.
96P066				no grains selected						5.72	MIN:EPD,ORGAR,PKGAR(<2%rd),hem,hbl,sph.
96P067				1						10.43	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,epd,ilm.
96P068				11	1	1				7.7	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,dps.
96P069				3		3				6.4	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,ilm,hbl.
96P070				8	1					10.75	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P071				5	1					6.42	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P072				3				1		9.45	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe. 1 euhedral chromite.
96P073		1		1						8.02	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm. Pyrope is rounded.
96P074				4	2	4		4		13.15	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm. 1 colourless spinel, 3 gahnite.
96P075				8	1	2			1	6.14	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,ilm,hbl,goe
96P076				5		2				2.5	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,dps.
96P077	2	1				2		1		10.53	MIN:ORGAR,PKGAR(<2%rd),HEM,ilm,epd,hbl. 1 gahnite.
96P078		1		3	1					2.63	MIN:ORGAR,PKGAR(<2%rd),HEM,ilm,goe,epd.
96P079				4						12.79	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,goe,hbl
96P080				2						1.53	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm,goe
96P081				3						2.74	MIN:HEM,EPD,GOE,orgar,pkgar(<1%rd),hbl.
96P082				no grains selected						10.24	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,epd,hbl.
96P083						1				10.67	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,ilm,epd.
96P084				1						10.91	MIN:HEM,ILM,ORGAR,PKGAR(<2%rd),goe,epd.
96P085				5		1				10.56	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96P086				2						10.27	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,ilm,hbl.
96P087				10	1					9.78	MIN:HEM,ORGAR,PKGAR(<1%rd),hbl,epd,goe.
96P088				2						9.94	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96P089				1		1				1.37	MIN:HEM,EPD,ORGAR,PKGAR(<1%rd),goe,hbl.
96P090				4		2				12.43	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl,sph
96P091		1		2						10.94	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P092				1		1				10.34	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,hbl,epd.
96P093	1				1					10.49	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,epd,hbl,dps.
96P094				no grains selected						6.42	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,epd,hbl,dps.
96P095				1						10.83	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl.
96P096				no grains selected						9.86	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P097	1	1		7	2	4				10.9	MIN:ORGAR,PKGAR(<2%rd),HEM,hbl,epd,ilm.
96P098				1						11.11	MIN:ORGAR,PKGAR(<1%rd),HBLhem,epd,pyr.
96P099				no grains selected						2.34	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl.
96P100				no grains selected						10.4	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,hbl,epd.
96P101					1					7.47	MIN:ORGAR,PKGAR(<1%rd),HBLhem,epd,goe.
96P102				no grains selected						9.73	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P103				no grains selected						10.8	MIN:ORGAR,PKGAR(<1%rd),EPD,hbl,sph.
96P104			1	5						8.3	MIN:ORGAR,PKGAR(<1%rd),HEM,hbl,epd,goe. 1 ilmenite in vial A.
96P105				no grains selected						17.43	MIN:ORGAR,PKGAR(<1%rd),HBL,epd,hem,ilm, kyn.
96P106				no grains selected						6.78	MIN:ORGAR,PKGAR(<1%rd),HBL,ilm,hem,epd, cpx,goe.
96P107					1	3		1		9.96	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,ilm,hbl,pyr. 1 gahnite,
96P108				2						14.4	MIN:HBL,EPD,orgar,pkgar(<1%rd),pyr.
96P109				no grains selected						10.01	MIN:EPD(90%),hbl,orgar,pkgar(<<1%rd).

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P110					1					10.87	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl
96P111				1		1				1.95	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl
96P112				no grains selected						5.46	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,ilm
96P113				no grains selected						10.51	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96P114							2			10.85	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,ilm,hbl.
96P115		2			1					10.54	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,ilm. 1 rounded pyrope.
96P116				no grains selected						10.49	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,epd,ilm,hbl
96P117		2								10.68	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,ilm,hbl. 1 white pyrope? PROBE.
96P118				1		1				10.79	MIN:HBL,ILM,orgar,pkgar(<1%rd),epd,hem.
96P119				3		2		1		10.73	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl. 1 gahnite.
96P120						1				10.78	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,hbl,pyr.
96P121				3						2.02	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96P122								1		9.3	MIN:EPD(80%),hbl,orgar,pkgar(<1%rd),pyr,sph. 1 gahnite.
96P123				2	1					10.15	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl,goe.
96P124		1			1			1		10.49	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm. 1 colouless spinel.
96P125				no grains selected						9.73	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,ilm.
96P126					2					10	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,ilm
96P127					2					10.78	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,ilm
96P128				no grains selected						10.35	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P129				no grains selected						10.62	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P130				4	1					10.91	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P131		1		7		1				9.85	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P132	1			1				1		4.9	MIN: EPD(80%),orgar,pkgar(<1%rd),zir(5%),hbl,sulph. 1 odd sulfide with inclusion.
96P133				no grains selected						5.31	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96P134				2				1		10.39	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl,goe. 1 gahnite.
96P135	2			1						10.81	MIN:ORGAR,PKGAR(<1%rd),EPD,hbl,goe, ilm,sph.
96P136				no grains selected						4.3	MIN:EPD,HBL,orgar,pkgar(<1%rd),pyr,sph.
96P137		1								2.89	MIN:EPD,ORGAR,PKGAR(<1%rd),hbl,goe,sph.
96P138				2	1					8.94	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe.
96P139					6					11.94	MIN:EPD,ORGAR,PKGAR(<2%rd),HBL,pyr,sph,goe.
96P140				1	2					7.88	MIN:EPD,ORGAR,PKGAR(<2%rd),hbl,sph,hem.
96P141					2			2		10.26	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl,sph,dps. 2 gahnites (1 twinned!)
96P142				1						9.85	MIN:EPD,SPH,HEM,orgar,pkgar(<2%rd),hbl,goe.
96P143				no grains selected						9.67	MIN:HBL,EPD,ORGAR,PKGAR(<<1%rd),pyr,sph.
96P144			1	1	2			2		10.41	MIN:ORGAR,PKGAR(<2%rd),EPD,hbl,hem,sph,goe. 1 gahnite, 1 tourmaline,1 Ilmenite in vial A.
96P145					3			1		0	MIN:ORGAR,PKGAR(<2%rd),HBL,EPD,hem,goe,sph. 1 olivine?
96P146				1	3					10.33	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe,sph.
96P147				1						9.91	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),sph,hem,goe.
96P148				4		1				0	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,sph,hem,dps.
96P149				no grains selected						10.27	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl, goe.
96P150				1						0	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem, dps,sph.
96P151					1			1		0	MIN:EPD,ORGAR,PKGAR(<1%rd),hbl,hem, goe.
96P152	1	1		2	2					9.87	MIN:ORGAR,PKGAR(<1%rd),HBL,HEM,epd, goe,pyr.
96P153				no grains selected						9.97	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem,goe.
96P154				no grains selected						9.93	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),hem,goe.
96P155					1					7.61	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),hem,goe,sph.
96P156		1		3						10.3	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe.
96P157				1	1			1		10.28	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe. 1 gahnite in others.
96P158				no grains selected						9.86	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P159				2	2			2		10.56	MIN:ORGAR,PKGAR(<2%rd),EPD,hbl,hem,goe. 2 gahnites in others.
96P160				2	1	1				0	MIN:EPD,ORGAR,PKGAR(<1%rd),hbl,hem,goe,sph.
96P161				1	2					9.79	MIN:EPD,ORGAR,PKGAR(<2%rd),hbl,hem,goe
96P162				1						10.59	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96P163					1					10.53	MIN:EPD,HBL,orgar,pkgar(<1%rd),goe,hem,sph.

Sample	Cr-D	GP	Ilm2	Low Cr-D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P164		1		1	1					9.85	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem,goe,sph. 1 odd orange garnet with chlorite.
96P165				no grains selected						0	MIN:EPD,HEM,GOE,orgar,pkgar(<1%rd),hbl,sph.
96P166				3						10.32	MIN:EPD,HBL,orgar,pkgar(<1%rd),hem,goe,sph.
96P167				1	1					0	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,goe,pyr,sph.
96P168				2	2					10.57	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd)sph,hem,pyr. 1 orange garnet with micaceous material attached.
96P169					2					10.77	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,goe,sph,hbl.
96P170		2			1	2				10.34	MIN:ORGAR,PKGAR(<1%rd),EPD,SPH,hbl,ilm,pyr.
96P171					1					9.84	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,sph.
96P172				no grains selected						10.5	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,sph,goe.
96P173				no grains selected						4.87	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,sph,goe.
96P174				1	1			1		9.94	MIN:EPD,ORGAR,PKGAR(<2%rd),HBL,hem,pyr,sph. 1 olivine?
96P175					3					10.98	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,sph,goe.
96P176		1			2					10.24	MIN:ORGAR,PKGAR(<1%rd),EPD,SPH,hem,hbl.
96P177				1	2					10.51	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,sph,hbl,goe.
96P178		1								10.94	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,sph. 1 round(ed) pyrope.
96P179				no grains selected						10.7	MIN:ORGAR,PKGAR(<1%rd),HEM,ILM,goe,epd,hbl.
96P180					1			1		10.31	MIN:HEM,GOE,ORGAR,PKGAR(<2%rd),EPD,hbl,sph. 1 anatase in other.
96P181				no grains selected						10.27	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,ilm,hbl.
96P182				no grains selected						10.22	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,ilm,goe,hbl.
96P183				no grains selected						10.47	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,goe,ilm,hbl.
96P184				2						10.49	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,goe,ilm,dps.
96P185				no grains selected						10.47	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,goe,hbl,ilm.
96P186				1	1					8.76	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,goe,ilm,sph.
96P187				no grains selected						10.89	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl,ilm.
96P188								1		2.76	MIN:EPD,ORGAR,PKGAR(<1%rd),hem,goe,hbl. 1 olivine?
96P189				no grains selected						10.31	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,goe,sph,hem.
96P190				no grains selected						7.08	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,goe,hbl,sph.
96P191		1		2						10.42	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl.
96P192				no grains selected						10.69	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl,ilm.
96P193		1								10.16	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl,goe.
96P194				no grains selected						10.56	MIN:HBL,EPD,ORGAR,PKGAR(<1%rd),hem,goe.
96P195				1						10.14	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe.
96P196		1						2		10.22	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),HBL,epd. 1 olivine? 1 pyroxene with Cr diop. colour.
96P197				no grains selected						10.08	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe.
96P198				no grains selected						10.9	MIN:ORGAR,PKGAR(<1%rd),HBL,epd,hem,goe.
96P199				no grains selected						10.53	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P200				1						8.2	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P201						1				10.36	MIN:ORGAR,PKGAR(<1%rd),EPD,SPH,hem,hbl,goe.
96P202				1	1					10.94	MIN:ORGAR,PKGAR(<2%rd),EPD,hbl,hem,goe,sph.
96P203								1		10.56	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,sph,goe.1 isotropic, high relief,colourless grain with inset triangles(R.I. Appears to be close to 2.74 of M.I.) Vial A.
96P204		2		1						10.67	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,sph,goe.
96P205				no grains selected						10.27	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl,sph.
96P206				1		1				10.32	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,cpx.
96P207				2						9.87	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,dps.
96P208		1								10.34	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P209				no grains selected						10.09	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,sph,goe.
96P210		1								9.73	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,goe,sph.
96P211				2	3	1				10.54	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P212					2					10.44	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P213		1								10.62	MIN:ORGAR,PKGAR(<1%rd),HEM,hbl,sph,hem,pyr.
96P214				2	1					10.92	MIN:ORGAR,PKGAR(<1%rd).EPD,HEM,goe,hbl,sph.
96P215								1		10.09	MIN:EPD,ORGAR,PKGAR(<1%rd),hem,ilm,hbl, 1 gahnite in others.
96P216				no grains selected						10.32	MIN:EPD(80%),gar,sph,hbl,hem.
96P217				no grains selected						10.68	MIN:EPD,ORGAR,PKGAR(<2%rd),HEM,hbl,goe,sph.
96P218				no grains selected						10.23	MIN:EPD,ORGAR,PKGAR(<2%rd),sph,hem,hbl,ilm.
96P219				4						10.64	MIN:EPD,ORGAR,PKGAR(<2%rd),sph,hem,hbl,ilm.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P220				no grains selected						10.03	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,goe,sph.
96P221				no grains selected						10.66	MIN:EPD(80%),SPH,hbl,gar,pyr.
96P222		1		1				2		9.42	MIN:EPD(85%),orgar,pkgar(<1%rd),sph,hbl,leukoxen, pyr,kyn. 1 olivine in others.1 uvarovite grain in others.
96P223								1		10.09	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,sph, 1 uvarovite grain in others.
96P224				2	1			1		10.6	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,sph,hbl,goe,pyr, 1 olivine? in others.
96P225								1		9.7	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl,sph, 1 gahnite in others.
96P226				no grains selected						10.48	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,hbl,epd,sph.
96P227				1				1		10.02	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl, 1 spinel? in others.
96P228		1						1		3.17	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,kyn,sph, goe,1 odd, blue, isotropic mineral in vial A.
96P229					1	1				3.89	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,hbl,goe,kyn.
96P230				1						10.52	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl,
96P231				no grains selected						10.52	MIN:ORGAR,PKGAR(5%rd),HEM,epd,hbl,goe.
96P232	2									10.64	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,goe,hbl,ilm. 1 of the Cr diopsides may be a pyroxene.
96P233				1	3			1		10.66	MIN:ORGAR,PKGAR(5%rd),HEM,hbl,epd,ilm. 1 olivine in others
96P234					1					10.21	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl.:
96P235		1								10.64	MIN:ORGAR,PKGAR(5%rd),HEM,GOE,epd,hbl.
96P236				2	1			2		6.09	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,hbl,sph. 2 odd irredescent oxide grains.
96P237					2					10.54	MIN:ORGAR,PKGAR(5%rd),HEM,epd,goe,hbl.
96P238		1						1		10.65	MIN:ORGAR,PKGAR(5%rd),HEM,EPD,hbl,goe. 1 gahnite.
96P239				3		1				10.51	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,hbl,ilm,dps.
96P240				1	1	1		1		10.57	MIN:HEM,ORGAR,PKGAR(<2%rd),goe,epd,ilm,dps. 1 red/purple zircon (other).
96P241				1						10.2	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl,sph.
96P242		1	2							10.74	MIN:ORGAR,PKGAR(10%rd),HEM,epd,ilm,hbl,goe. Imenite in Vial A. One with a rough surface similar to that of ilm from kimb.
96P243		1		1						10.54	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,ilm,goe.
96P244								1		10.01	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,goe,sph. 1 olivine? in others.
96P245						1				12.06	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,sph.
96P246				no grains selected						10.29	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P247					1					10.67	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,goe,sph.
96P248				no grains selected						5.26	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,goe,sph.
96P249						1				10.76	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl,sph.
96P250								2		10.05	MIN:HEM,ORGAR,PKGAR(<1%rd),GOE,ilm,epd,hbl,sph. 2 olivine grains.
96P251				2				1		10.79	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,dps,sph. 1 spinel in others.
96P252		1						3		12.44	MIN:ORGAR,PKGAR(5%rd),EPD,HEM,hbl,goe,sph. 1 spinel, 1 gahnite.
96P253					1			1		10.65	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,hbl,epd. 1 grain Rhodocrosite or cinnabar? in others.
96P254				2				1		7.21	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,hbl,sph. 1 olivine?
96P255		1								10.16	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl,sph.
96P256						1		3		10.83	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,sph. 3 gahnite.
96P257				4						10.76	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,sph,goe.
96P258				1		2		1		10.81	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,sph,ilm,goe. 1 gahnite.
96P259		1								10.34	MIN::ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,ilm.
96P260				no grains selected						1.25	MIN:EPD,HBL,goe,gar,sph,cpx.
96P261				1				1		10.43	MIN:ORGAR,PKGAR(<1%rd),HEM,HBL,epd,goe.
96P262					1					6.47	MIN:ORGAR,PKGAR(<1%rd),HBL,hem,epd,goe,sph.
96P263				no grains selected						7.18	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,sph.
96P264								1		10.37	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe. 1 gahnite.
96P265				1						10.64	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96P266	1									10.43	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe,sph.
96P267				1						10.04	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,ilm,sph.
96P268				no grains selected						8.62	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe.
96P269				no grains selected						2.83	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe.
96P270				no grains selected						6.01	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe.
96P271				no grains selected						1.01	MIN:EPD,ORGAR,PKGAR(2%rd),HEM,hbl,goe.
96P272				no grains selected						1.32	MIN:ORGAR,PKGAR(<1%rd),HBL,epd,hem,goe.
96P273					1					7.1	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,hbl,goe.
96P274					1					5.04	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,ilm,goe.
96P275	1			3						7.87	MIN:EPD,ORGAR,PKGAR(<2%rd),HEM,hbl,goe,dps.
96P276				1	1					6.75	MIN:EPD,ORGAR,PKGAR(1%rd),HBL,hem,dps,sph.
96P277				1	1	1				10.9	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96P278		1		4				1		6.96	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,goe,hbl,sph. 1 red anisotropic grain in others.
96P279				no grains selected						11.77	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,goe,hbl,sph.
96P280				no grains selected						4.27	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,hbl.
96P281				1						10.85	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl.
96P282				1						2.15	MIN:EPD(80%),HBL,orgar,pkgar(<1%rd),hem,goe,kyn.
96P283				no grains selected						9.69	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96P284				no grains selected						5.94	MIN:EPD(80%),HBL,orgar,pkgar(<1%rd),hem,goe,kyn.
96P285				no grains selected						2.56	MIN:EPD(80%),HBL,orgar,pkgar(<1%rd),hem,goe,kyn.
96P286				no grains selected						4.29	MIN:GOE,HBL,ORGAR,PKGAR(<2%rd)hem,epd.
96P287				4						10.62	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,sph,goe,hem,ilm,dps.
96P288				no grains selected						5.29	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,sph,goe.
96P289		1								4.81	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,sph,goe.
96P290					1					0.02	MIN:EPD,gar,hem,hbl.
96P291								1		3.2	MIN:EPD,HBL,orgar,pkgar(<1%rd),hem,sph,goe, 1 olivine? in others.
96P292	1				3					10.91	MIN:EPD,HBL,SPH,gar,hem.
96P293					1	1		2		13.83	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl,sph. 2 olivine? in others.
96P294				3	2					35.71	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P295				no grains selected						12.7	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl.
96P296					3					7.97	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,goe,hbl,sph.
96P297		1	1		1					10.39	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,ilm. 1 very black ilm with fine chonchoidal ribbing. Vial A.
96P298						2				10.89	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,ilm.
96P299				2	1					10.79	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,hbl,goe.
96P300	1	1		1	2					10.51	MIN:HEM,ORGAR,PKGAR(<1%rd),goe.
96P301				7	2					4.79	MIN:HEM,ORGAR,PKGAR(<1%rd),HBL,epd,dps,goe.
96P302					1			1		9.78	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,epd,hbl. 1 spinel in others.
96P303	1		2							13.88	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96P304	1	1	2							13.08	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,hbl,goe,cpx,kyn. Pyrope rounded (with only minor frosting).
96P305				1		1		1		10.8	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,hbl,goe. 1 spinel.
96P306				3	1					10.23	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe.
96P307	1	1		1						7.13	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,goe. Pyrope is very pale.
96P308		2		2	1			1		10.11	MIN:ORGAR,PKGAR(5%rd),HEM,EPD,goe,kyn,hbl. 1 olivine?
96P309				1	2					10.27	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,goe.
96P310		1	2					1		10.92	MIN:ORGAR,PKGAR(5%rd),HEM,epd,hem,goe. 1 olivine in vial A.
96P311				1	1					3.15	MIN:HBL,EPD,orgar,pkgar(<1%rd),cpx,goe.
96P312				1	1			3		9.89	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,cpx,sph. 1 chromite, 2 gahnite.
96P313				1			1			10.17	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,cpx,sph. 1 ilmenite is very black fine conchoidal ribs.
96P314				no grains selected						2.74	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,goe,sph.
96P315				3						5.96	MIN:HBL,HEM,EPD,ORGAR,PKGAR(<1%rd),goe,cpx.
96R001				3	8	2		1	1	76.13	MIN: HEM,ORGAR,PKGAR(<2%rd),goe,ilm,hbl,epd.1 gahnite, 1chromite. Garnets are promising.
96R002				12	3					48.37	MIN: HEM,ORGAR,PKGAR(<1%rd),epd,goe,ilm,hbl,dps.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R003				8	7			2		44.52	MIN: HEM,ORGAR,PKGAR(<2%rd),goe,ilm,epd,hbl. 1 gahnite, 1 uvarovite.
96R004		1		4	6		1	1*		39.54	MIN: HEM,ORGAR,PKGAR(<2%rd),GOE,ilm,epd. Pyrope very round.*colourless euh. spinel?, probe ilm.
96R005				7	2					6.12	MIN: HEM,ORGAR,PKGAR(<2%rd),EPD,goe,hbl,ilm.
96R006				24	2		1			17.92	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,hbl,goe,ilm.
96R007				11	7					17.37	MIN:HEM,ORGAR,PKGAR(<1%rd),goe,ilm,epd,hbl,dps.
96R008				6	2			1		6.88	MIN:ORGAR,PKGAR(<2%rd)HEM,epd,goe,ilm,hbl,dps. 1 gahnite.
96R009				16	22	1	1	1		46.6	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,ilm,epd,hbl,dps. PROBE large ilmenite, 1 purple zircon.
96R010		1		9	1			1		14.85	MIN:ORGAR,PKGAR(<2%rd)HEM,EPD,goe,ilm,hbl,dps, kyn. 1 gahnite.
96R011		1		9	8		1			30.46	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,hbl,goe,ilm,dps. Pyrope well rounded.
96R012				7	4					56.4	MIN:ORGAR,PKGAR(<2%rd)HEM,goe,ilm,hbl,epd,dps, opx.
96R013				9	4			2		23.3	MIN:ORGAR,PKGAR(<2%rd)HEM,goe,epd,ilm,hbl,dps. 1spinel, 1 purple zircon.
96R014		8		15	3		13			17.55	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,hbl,goe,ilm,dps.
96R015				11	12		2	1		31.2	MIN:HEM,ORGAR,PKGAR(<3%rd),epd,hbl,goe,ilm,dps. 1 round purple zircon Probe colourless/white gar.
96R016					3					1.64	MIN:ORGAR,PKGAR(<2%rd),ILM,HEM,EPD,goe,dps. Odd garnet with coating.
96R017	2		1	5	28		5	3		15.73	MIN:OR&PKGAR(<2%rd),HBL,HEM,EPD,ilm,goe,dps. Probe ilmenite in vial A. 2 gahnite,1 chromite, Orange garnet of interest.
96R018				5						1.51	MIN:EPD,HBL,ORGAR,PKGAR(<2%rd),dps,opx,sph, goe,ilm.
96R019				10	4					4.19	MIN:ORGAR,PKGAR(<2%rd),EPD,hbl,ilm,sph,dps.
96R020				10	2					6.5	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,HEM,ilm,dps.
96R021				18	1					9.53	MIN:EPD,HBL,ORGAR,PKGAR(<2%rd),dps,opx,sph,ilm,kyn.
96R022				9	2			1		6.07	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,HEM,ilm,dps. 1 spinel in others.
96R023				7		1		3		2.82	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem,ilm,dps. 3 distinctive zircon.
96R024				17						7.92	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,HBLilm,dps,kyn.
96R025		3		17		1		1		24.23	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,ilm,dps. Pyropes well rounded. 1 pink euhedral, spinel?.
96R026				6	2		1			25.97	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ILM,hbl, zir<0.1%. ILM2: Very black/chon.fracture.
96R027				4	1					9.88	MIN:ORGAR, PKGAR(<2%rd),HEM, EPD, ILM, hbl, kyn,sph.
96R028				9	7	4				11.65	MIN:PKGAR,ORGAR(<1%),HEM,EPD,HBL,ilm,goe,dps, opx.
96R029				6	3			3		50.07	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD, ILM,goe,kyn,dps,zir.brown. Other: 1 ultra mafic, 2 olivine?
96R030					4					7.18	MIN:HEM,ORGAR,PKGAR(<1%),GOE,epd,hbl. Grains are partially coated with Fe oxide.
96R031				7	7					21.46	MIN:HEM,ORGAR,PKGAR(<1%),GOE,epd,hbl. Interesting orange garnets.
96R032				1	3		1			6.87	MIN:PKGAR,ORGAR(<1%),HEM,DPS,EPD,HBL,ilm,goe. ILM2: multi-xtal.
96R033				2	1	1				2.94	MIN:PKGAR,ORGAR(<<1%),HEM,GOE,EPD,HBL,ilm,dps,opx. Grains covered with Fe oxide and clay.
96R034				5	5					5.83	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,hbl,pyr,sph, opx,dps.
96R035				5	5	4				12.34	MIN:PKGAR,ORGAR(<1%),HEM,HBL,EPD,ilm,goe,dps, opx.
96R036				4	6					29.57	MIN:PKGAR,ORGAR(<1%),HEM,HBL,EPD,ilm,goe,dps, opx.
96R037				5	4		1	1		17.4	MIN:HEM,ORGAR,PKGAR(<2%),epd,hbl. ILM2: rounded, frosted. 1 rounded tour.
96R038					1	3	1	2		48.33	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,EPD,ilm,opx. 1 olivine?, 1 corundum. ILM2: multiXtal.
96R039		2		12	1					37.37	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,ilm,hbl. 2 corundums.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R040				5	7		1			14.25	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,hbl,sph,opx, dps. ILM2: 1 multiX-tal. Promising Or garnets.
96R041				3			2			1.73	MIN:EPD,ORGAR,PKGAR(<2%rd),HEM,HBL,sph,,ilm.
96R042				4						6.41	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,hbl.
96R043				no grains selected						1.08	MIN:HBL,EPD,PKGAR,ORGAR(<1%rd)hem,dps,opx.
96R044				10	8					13.03	MIN:ORGAR,PKGAR(<1%rd),HEM,ILM,EPD,hbl.
96R045				no grains selected						1.34	MIN:HEM,GOE,ORGAR,ilm,epd.
96R046				15			3			3.69	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,EPD,dps,hbl. ILM2: multixtal.
96R047				6	2					18.97	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,EPD,sph,hbl.
96R048				no grains selected						15.52	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,EPD,hbl.
96R049				1						2.1	MIN:HEM,EPD,ORGAR,PKGAR(<2%rd),HBL,ilm,sph.
96R050				3	1					12.31	MIN:ORGAR,PKGAR(<2%rd),HEM,HBL,EPD,ILM,goe.
96R051				2	13	2		7		18.38	MIN:ORGAR<PKGAR(<2%ord),HEM<ILM<epd,hbl, sulphide (some chalco.?),large sphenes,manyenhedral garnets, 2 spinels, 1 melanites,3 sulfide, 1 corundum(red grain).
96R052				17	1		2	2		11.71	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ILM,dps,hbl,sph,zircon,kyn. ILM2: multixtalline.
96R053		1		14						2.52	MIN:EPD,ORGAR,PKGAR(<2%rd),HBL,ILM,hem,sph,dps.
96R054				5		1				13.38	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,epd,hbl,goe.
96R055					2			6		6.77	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,ILM,pyr,sph,hbl,goe ,(sulphide-chalco?). 3 gahnite, 3 sulphides.
96R056				6		2				3.51	MIN:EPD,ORGAR,PKGAR(<2%rd),HBL,dps,hem,pyr,ilm,sph .
96R057				2	1					6	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,GOE,opx,hbl.
96R058				3	11		3			10.24	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,epd,ilm,kyn,hbl. ILM2: multixtall. Interesting or garnets
96R059	1	1		5	3		1			15.82	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,epd,ilm,kyn,hbl. ILM2: very black with fine chonchoidal ribs.
96R060		4		7	4	7				5.66	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ILM,zir,kyn,hbl. ILM2: multixtalline.
96R061	1	1			1	5		4		15.01	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,EPD,hbl,kyn,sph. 4 olivine?, 1 tourmaline.
96R062								2		16.35	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,HBLepd,pyr,sph,zir. 2 euhedred mineral grains?.
96R063				no grains selected						0.43	MIN: EPD,hem,hbl,gar.
96R064								5		0.47	MIN:95% mineral X, an altered white mineral (altered epd.., barite,pyromorphite??), HCl: does not react.
96R065				no grains selected						0.21	MIN:HBL,barite?, ilm.
96R066				1						6.5	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl.
96R067				2						1.78	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,ilm,hbl.
96R068				7		1		4		17.98	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,goe,hbl. 3 olivines? 1 red/purple rutile.
96R069				1						22.27	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,ilm.
96R070				2		8				16.15	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,EPD,ilm,hbl.
96R071				2	1					17.84	MIN:HEM,ORGAR,PKGAR(<2%rd),epd,goe,hbl,ilm.
96R072	1							2		6.08	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,hbl,dps. 2 gahnite.
96R073				2			1			19.39	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ILM,hbl,goe,kyn. ILM2: black with fine chonchoidal ribbing.
96R074				3				1		20.19	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,ilm,hbl,hbl,kyn.. Good example of anatase (others)
96R075	1	2		10	7					17.73	MIN:HEM,ORGAR,PKGAR(<2%rd),EPD,ilm,hbl.
96R076							3			21.92	MIN:ORGAR,PKGAR(<2%rd),HEM,ILM,epd,hbl,goe. ILM2: 1 chromite?, 2 multi X-talline.
96R077		1		5	6		1	1		5.75	MIN:OR GAR,PKGAR(<2%ORD),hem,epd,hbl (very fresh),goe,sulphide,ilm,dps. ILM2: 1 black with fine chon ribbing, 1 sulphide.. Pyrope(9?) LOST.
96R078		2		6	3		3	1		53.1	MIN:ILM,ORGAR,PKGAR(<2%rd),epd,ilm,hbl.. Pyrope rounded. ILM2: black, fine chon. rib. 1 chromite?
96R079				4				5		19.16	MIN:ORGAR,PKGAR(<2%rd),HEM,goe,ilm,epd,zir,sph, kyn. 3 gahnites, 5 olivines?
96R080				3						19.37	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,ilm,hbl,kyn. 2 olivines?

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R081	1	3		6	1	7		2		31.87	MIN:ORGAR,PKGAR(<2%ord),HEM,ILM,epd,sph,hbl, goe. 1(vial A) pyrope is round and odd colour (probe). 2 spinels. Total concentrate picked.
96R082				10						1.84	MIN:EPD,ORGARPKGAR(<1%RD),HBL,dps,hem,ilm
96R083	1	4								4.29	MIN:PKGAR,ORGAR(<1%),HEM,EPD,HBL,ilm,pyr,goe, dps,opx
96R084				1				1		21.19	MIN:ORGAR/PKGAR(<2%RD),HEM,goe,epd,ilm. 1 tourmaline, rounded.
96R085				3	1	3		2		19.23	MIN:ORGAR,PKGAR(<2%rd),HEM,ilm,epd,hbl. 1 spinel?, 1 olivine??
96R086				2			1	3		20.03	MIN:ORGAR,PKGAR(<2%ord), HEM,epd,ilm,hbl, 11ILM2:very black with promenent chonchoidal ribbing,1 olivine?, 1 corudum, 1 tourmaline?.
96R087				2						8.77	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,hbl. 1 olivine?
96R088				3				2		11.26	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,hbl. 1 tourmaline, 1 chromite,.
96R089				1	2	1				20.78	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,hbl.
96R090	1			3		1		2		7.44	MIN:HEM,ORGAR,PKGAR(<2%rd),ilm,epd,hbl,pyr.) 2 rutile (distinctive, acicular nigrine, also seen in samples R088, R089
96R091		1		2						10.95	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,hbl.
96R092		1			2	3				16.36	MIN:>80% ORGAR,PKGAR(<2%rd),ilm,hem,epd,hbl.
96R093								1		10.78	MIN:ORGAR,PKGAR(<2%rd),ILM,EPD,hbl,pyr. 1spinel.
96R094				no grains selected						9.98	MIN:EPD,HBLORGAR,PKGAR(<<1%rd),sph,pyr,ilm.
96R095					3		1	1		6.98	MIN:missing. ILM2: Very black,chon.ribs. 1 chromite.
96R096				no grains selected						1.44	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,ilm.
96R097				no grains selected						8.38	MIN:EPD,HBLORGAR,PKGAR(<1%rd),ilm,hem. 3 olivines?, 1 grain ?? in others.
96R098					4			1		11.31	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,ilm,pyr. 1 chromite.
96R099				1	5		1			14.85	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,ilm,epd,hbl. ILM2: Frosted with chonchoidal, fracture on one side.
96R100				3				1		54.59	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,ilm,goe. Black spinel?.
96R101	2	2		14		4		3		26.81	MIN:ORGAR,PKGAR9<1%rd),HEM,EPD,ilm,dps,kyn. 3 gahnites. Chrome diopsides should be probed.
96R102		1								1.92	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,ilm,goe. Pyrope has pink tint, but should be probed.
96R103		1		1						8.91	MIN:75%EPD,ORGAR,PKGAR(<<1%rd),hem,ilm.
96R104				no grains selected						8.66	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,ilm,hbl.
96R105				no grains selected						8.82	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,ilm,hbl.
96R106				1						6.59	MIN:ORGAR,PKGAR(<2%rd),Ilm,lcx.
96R107				9	3					10.39	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,hbl,goe.
96R108				1						3.94	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,lcx,goe.
96R109				no grains selected						6.6	MIN:EPD,ORGAR,PKGAR(<1%rd),hem,hbl,ilm,pyr.
96R110	1									8.85	MIN:ORGAR,PKGAR(<1%rd),EPD,hbl,ilm,pyr.
96R111					1		2	1		20.11	MIN:HEM,ORGAR,PKGAR(<2%rd),ilm,epd,hbl. ILM2: 2 very black grains with conchoidal ribs. 1 gahnite.
96R112								1		19.83	MIN:ORGAR,PKGAR(<2%rd),HEM,hbl,epd,ilm. 1 odd turquoise amphibole.
96R113				3	1					20.7	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,ilm,hbl,dps.
96R114				6		1				1.69	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,dps,kyn.
96R115				6				1		2.09	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,hbl,dps,kyn. 1 chromite.
96R116		1								12.67	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,dps,kyn,ilm.
96R117	1			4	2					10.23	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96R118		1		2						18.34	MIN:ORGAR,PKGAR(<1%rd),HBL,epd,hem,ilm,goe.
96R119				5						9	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,dps,kyn.
96R120				no grains picked						16.98	MIN:.ORGAR,PKGAR(<2%rd),HEM,epd,hbl,dps,kyn.
96R121		1		3	1	1				13.02	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,dps.
96R122				2	2					7.89	MIN:ORGAR,PKGAR(<1%rd),HBLEPD,hem,kyn. 1 gahnite?, 2 olivine?
96R123								2		6.56	MIN:EPD,HBLORGAR,PKGAR(<1%rd),hem,pyr. 1 olivine? 1 unknown colourless mineral.
96R124				no grains selected						7.53	MIN:EPD,HBLORGAR,PKGAR(<2%rd),hem,pyr.
96R125				2						5.64	MIN:ORGAR,PKGAR(<1%rd),HBLEPD,hem,pyr,kyn.
96R126				no grains selected						9.94	MIN:ORGAR,PKGAR(<2%rd),EPD,HBLhem,pyr,kyn.

Sample	Cr-D	GP	Ilm2	Low Cr-D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R127				3						3.71	MIN:EPD,ORGAR,PKGAR(<1%rd),HBLsph,hem,kyn.
96R128				no grains selected						1.63	MIN:EPD,PRGAR,PKGAR(<1%rd),HBLsph,kyn.
96R129				no grains selected						0.42	MIN:EPD,SPH,ORGAR,PKGAR(<1%rd),hbl,hem,pyr.
96R130								5		2.76	MIN. EPD,HBLORGAR,PKGAR(<1%rd),hem, pyr, 5 orange tremolite?(very distinctive variety.1% or so; mineral seen only inR130)
96R131										1.6	MIN:EPD,ORGAR,PKGAR(<1%rd),ilm,hbl,hem.
96R132		1		1	1					14.34	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,sph,kyn.
96R133	1			3						5.38	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl,sph.
96R134				no grains selected						4.98	MIN:EPD,ORGAR,PKGAR(<1%rd),HBLpyr,sph.
96R135				no grains selected						0.53	MIN:EPD(90%),orgar,pkgar(<<1%rd),hem.
96R136				8		7		1		10.53	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,ilm,sph,hbl. 1 gahnite.
96R137		1			3			1		11.12	MIN:ORGAR,PKGAR(<<1%rd),HBLEPD,sph,hem. 1 tourmaline.
96R138					1					0	MIN:ORGAR,PKGAR(<1%rd)(80%),HEM,epd,ilm,hbl.
96R139				2	1					6.11	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,ilm.
96R140						1				14.45	MIN:ORGAR,PKGAR(<1%rd),HEM,ilm,epd,hbl.
96R141		1		1						2.71	MIN:EPD,ORGAR,PKGAR(<1%rd),HBLilm,hem. Pyrope is pinkish, should be probed.
96R142				no grains selected						15.57	MIN:ORGAR,PKGAR(<2%rd),HEM,ilm,epd,hbl.
96R143		1			2	1				14.73	MIN:HEM,ORGAR,PKGAR(<1%rd),ILM,hbl,epd. Orange pyrope with kelyphite?
96R144		1		1						9.99	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,ilm,hbl.
96R145				1	2					15.61	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,ilm,hbl.
96R146				no grains selected						14.95	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,ilm,hbl,sph.
96R147		4		1	1			1		14.15	MIN:ORGAR,PKGAR(<1%OD),epd,hem,ilm,hbl, 1 colourless octehdral grain (spinel? Diamond?) put in a vial PROBE.
96R148		3		4	2	3		1		34.14	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,ilm,hbl. Other: 1 olivine?
96R149					1					5.62	MIN:EPD(75%),ORGAR,PKGAR(<<1%rd),hbl,hem,ilm, sph.
96R150					2					7	MIN:EPD,ORGAR,PKGAR(<<1%rd),hbl,hem,ilm,sph.
96R151					1	2				10.26	MIN:EPD,ORGAR,PKGAR(<<1%rd),hem,hbl,ilm,sph.
96R152				1		1				12.86	MIN:HBL,EPD,ORGAR,PKGAR(<<1%rd),hem,ilm.
96R153				1	2	1				7.16	MIN:ORGAR,PKGAR(<2%rd),EPD,HBLhem,ilm.
96R154					2					14.22	MIN:EPD,ORGAR,PKGAR(<1%rd),ILM,hbl,hem,pyr,sph.
96R155		2			1	2				26.4	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,ilm,hbl,sph.
96R156				no grains selected						6.19	MIN:EPD,HBL,SPH,hem,gar,ilm.
96R157		1		3	2	1				9.8	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,sph,ilm. 1 orange garnet with chlorite.
96R158					1	2		1		9.06	MIN:ORGAR,PKGAR(<1ord),EPD,HBL,sph,pyr,hem, 1 orange garnet with chlorite shell, 1 odd sulphide, 1 poss. Pink epidote.
96R159				6	2	1				9.62	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,goe,hem,dps,kyn.
96R160				1	1					9.93	MIN:EPD,ORGAR,PKGAR(<2%rd),HBL,sph,goe,hem.
96R161						1				10.36	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,sph,ilm.
96R162					1	1		2		9.67	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,hbl,goe,sph. 1 big fresh olivine, 1 spinel.
96R163				no grains selected						4.52	MIN:EPD,ORGAR,PKGAR(<1%rd),SPH,hem,hbl,goe.
96R164	1	1								10.29	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,sph,hem,goe.
96R165						2	1	1		9.09	MIN:ORGAR,PKGAR(<1%RD),EPD,SPH,hem,ilm,hbl, Possibly 1 olivines, 1very black ilmenite with fine, chon.ribbing.
96R166					1		1	1		10.31	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,sph,hbl,ilm, Possibly 1 olivine, 1 very black ilmenite with fine chon.ribbing
96R167				no grains selected						1.58	MIN:EPD,HBL,orgar,pkgar(<1%rd),hem,sph.
96R168	1			4	1					1.91	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,sph,dps.
96R169					4	7				10.23	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.
96R170				no grains selected						10.9	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,goe,hbl,ilm.
96R171	2			4						10.42	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,goe,hbl,ilm,sph.
96R172				1						10.68	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,hbl,epd,ilm.
96R173					1					9.76	MIN:HEM,ORGAR,PKGAR(<1%rd),GOE,epd,hbl.
96R174					6					10.88	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R175				17						10.34	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,goe,ilm.
96R176						8				9.23	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,goe,ilm.
96R177				8	1	5		1		10.95	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,hbl,goe.
96R178				1	1					9.51	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,ilm.
96R179		1						1		8.36	MIN:ORGAR,PKGAR(<2%rd),EPD,hem,hbl,goe.
96R180				1		1		1		6.41	MIN:EPD(80%),orgar,pkgar(<2%rd),hbl,sph.
96R181				no grains selected						12.43	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,sph,hbl,goe.
96R182		1			1	1		1		10.43	MIN:ORGAR,PKGAR(<2%rd),EPD,HEM,hbl,ilm. 1 pink anisotropic (same colour as pyrope in A.)
96R183				3				1		10.72	MIN:ORGAR,PKGAR(<1%rd),EPD,SPH,hem,ilm,hbl. 1 gahnite.
96R184						2		1		10.13	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,ilm. 1 olivine?.
96R185				4		5		1		10.23	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe. 1 olivine?.
96R186					6					10.12	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,hbl,epd,ilm.
96R187	1			11		6		1		10.21	MIN:ORGAR,PKGAR(<1%rd),HEM,HBL,epd,goe,ilm. 1 euhedral chromite (there may be a great deal of chromite in this sample.)
96R188						3				10.81	MIN:ORGAR,PKGAR(<1%rd),HEM,HBL,goe,epd,ilm.
96R189				3						9.8	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe,sph.
96R190	2									10.28	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),sph,hem,goe.
96R191				11	1					4.66	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),hem,goe,sph.
96R192				9		2				10.81	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,hbl.
96R193				1	2	1		1		10.36	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl. 1 light pink octehedron with triangular etching (vial A).
96R194				no grains selected						10.05	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,goe,ilm.
96R195				3	1	2				4.37	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,ilm,hbl,sph.
96R196				1						4.32	MIN:EPD,ORGAR,PKGAR(<2%rd),HEM,hbl,sph,goe.
96R197					1	2				3.64	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,sph,ilm.
96R198				1				1		7.41	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,goe,cpx. 1 uvarovite.
96R199	1			1	1					10.34	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe.
96R200					1	1				10.82	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,sph.
96R201				no grains selected						10.47	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl,ilm.
96R202					1					10.61	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,hbl,dps.
96R203				no grains selected						1.02	MIN:ORGAR,PKGAR(<1%rd),EPD,goe,hem,hbl.
96R204					1					4.11	MIN:EPD,ORGAR,PKGAR(<1%rd),hem,sph,goe.
96R205			2		3					10.46	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,sph,hbl,goe,ilm. 2 multi X-talline ilmenite in vial A.
96R206				3				1		7.3	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,sph,goe. 1 olivine?
96R207				2						12.5	MIN:EPD,ORGAR,PKGAR(<1%rd),SPH,hem,hbl,goe.
96R208		1		6	1					7.97	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem,goe,sph.
96R209				4						8.8	MIN:EPD,ORGAR,PKGAR(<1%rd),hbl,hem,sph,goe.
96R210					2	5				13.99	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl,ilm.
96R211				1	1					8.93	MIN:EPD,ORGAR,PKGAR(<1%rd),sph,hbl,hem,goe.
96R212					2					13.07	MIN:EPD,ORGAR,PKGAR(<1%rd),SPH,hbl,hem,goe.
96R213				no grains selected						3.32	MIN:EPD(80%),HBL,gar,hem,sph.
96R214				no grains selected						10.44	MIN:EPD,HBL,SPH,orgar,pkgar(<1%rd),pyr.
96R215				no grains selected						10.29	MIN:EPD,HBL,SPH,gar. Many euhedral sphene with leucoxene.
96R216					1					11.16	MIN:EPD,HBL,SPH,orgar,pkgar(<1%rd),pyr,goe.
96R217				no grains selected						11.67	MIN:EPD,HBL,SPH(5%),orgar,pkgar(<1%rd),pyr,apat.
96R218				1				1		10.14	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl.1 bright pink-red transluscent mineral (probbably not cinnabar).
96R219		1		1						10.74	MIN:HEM,ORGAR,PKGAR(<1%rd),HBL,epd,goe,dps.
96R220		1								10.65	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,hbl,epd. Pyrope has colour of those from Smokey Falls Kimberlite.
96R221				4	1					10.52	MIN:HEM,ORGAR,PKGAR(<2%rd).hbl,epd,goe.
96R222				3						10.87	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),hbl,epd.
96R223	1			9	1			1		9.65	MIN:HEM,ORGAR,PKGAR(20%rd),GOE,epd,hbl,dps. 1 gahnite. Difficult to determine if the garnet is isotropic.
96R224		1	1					2		10.16	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,epd,hbl,dps. 1 colourless spinel; 1 pink Mn epidote? Pyrope is round, Ilmenite in vial A.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R225				no grains selected						10.06	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,epd,hbl,dps.
96R226				no grains selected						10.42	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl.
96R227				1						1.33	MIN:EPD,HBL,HEM,prgar,pkgar<<1%rd),goe,sph.
96R228					1					10.21	MIN:HEM,ORGAR,PKGAR(20%rd),EPD,goe,hbl.
96R229				3	1					10.34	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl.
96R230		1								9.88	MIN:HEM,ORGAR,PKGAR(<2%rd),GOE,hbl,epd.
96R231				1	1			1		4.8	MIN:EPD,HEM,ORGAR,PKGAR(<1%rd),hbl,sph,dps. 1 gahnite.
96R232				1						10.01	MIN:ORGAR,PKGAR(10%rd),HEM,epd,hbl,goe.
96R233	1	1								10.83	MIN:ORGAR,PKGAR(5%rd),HEM,epd,hbl,goe. Very pale pyrope? with G10 colour(lilac) PROBE. Cr diopside is rounded.
96R234		1						1		10.22	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl. 1 colourless, anistropic microsphere.
96R235						4		2		10.43	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goehbl. 2 distinctive hematite may be good indicators.
96R236				no grains selected						10.5	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),ilm.epd.
96R237				3	1					10.22	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),hbl,epd.
96R238	1			3		2				12.72	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goehbl.
96R239				5	1			1		14.77	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,ilm,dps. 1 gahnite.
96R240	1	2	2	19	1	7		5		9.64	MIN:ORGAR,PKGAR(<1%rd),HEM<GOE,epd,hbl.ilm. Min of 3 chromite, 1 sulphide,multichrystalline and very black ilmenites with fine chon.ribs. 2 ilmenite in vial A.Pyrope has pink colour of those from Smokey Falls (B.McClegnahan).
96R241	2			6						14	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,dps,sph.
96R242				no grains selected						15.77	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,hbl,sph.
96R243					1					4.48	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,sph,dps.
96R244								1		10.08	MIN:ORGAR,PKGAR(<1%rd),EPD,hem,hbl. 1 gahnite.
96R245				no grains selected						0.79	MIN:EPD,HBL,GOE,hem,sph.
96R246				no grains selected						10.24	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl.
96R247				no grains selected						15.28	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,hbl,sph.
96R248				2	4	1	1	1		17.27	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe. 1 multixtalline ilmenite in vial A, 1 pink Mn eoidote?
96R249		1			2					9.9	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,hem,sph,goe. 1 rounded pyrope
96R250				no grains selected						10.26	MIN:EPD(80%),HBL,sph,gar.
96R251				4						10.78	MIN:ORGAR,PKGAR(<2%rd),HBL,EPD,hem,goe.
96R252						1				10.88	MIN:ORGAR,PKGAR(<2%rd),HEM,HBL,epd,goe,ilm.
96R253					3					10.09	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl,sph.
96R254				3	3	1				10.62	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,sph.
96R255				2		3		1		10.37	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,sph. 1 olivine?
96R256				6		6				10.23	MIN:ORGAR,PKGAR(<1%rd),EPH,HBL,goe,hem.
96R257				8	1	2				5.71	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe,ilm.
96R258				no grains selected						0.05	MIN:EPD,HEM,GOE,dps,gar,hbl.
96R259						1				2.56	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,ilm,dps,hbl.
96R260				1						3.93	MIN:ORGAR,PKGAR(<2%rd),HEM,GOE,epd,hbl.
96R261				2	1			1		10.19	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,hbl,epd,ilm. 1 spinel(gahnite?)
96R262				no grains selected						0.04	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,ilm,hbl,goe.
96R263				no grains selected						1.11	MIN:EPD,ORGAR,PKGAR(<2%rd),hem,goe,hbl.
96R264				2				1		0.65	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,cpx,hbl,sph. 1 odd rutile?
96R265		2								1.96	MIN:EPD,ORGAR,PKGAR(<1%rd),HEM,hbl,goe,dps.
96R266				no grains selected						1.56	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl.
96R267				no grains selected						10.18	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl,ilm.
96R268				4				1		5.02	MIN:EPD,ORGAR,PKGAR(<1%rd),hem,goe,hbl,kyn. 1 euhedral spinel in vial A.
96R269				3		1				6.51	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),hbl,epd,ilm.
96R270				no grains selected						7.08	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl.
96R271		1								2.74	MIN:EPD,HEM,ORGAR,PKGAR(<2%rd),hbl,goe.
96R272				no grains selected						6.91	MIN:ORGAR,PKGAR(<1%rd),EPD,HEM,goe,hbl.
96R273				no grains selected						10.42	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe,ilm.
96R274		1		2	1					1.27	MIN:ORGAR,PKGAR(<2%rd),EPD,HBL,hem,goe,dps.
96R275				1						2.25	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,hbl.

Sample	Cr-D	GP	Ilm2	Low Cr D	Gnt und	Ilm	Ilm2	Other	Gold	Picked (g)	Comments
	Vial A			Vial B							
96R276	2	1		1	2	1				4.81	MIN:EPD,ORGAR,PKGAR(<1%rd),HBL,sph,hem,goe.
96R277					1					8.51	MIN:EPD,HBL,ORGAR,PKGAR(<1%rd),sph,hem,ilm.
96R278					1					10.34	MIN:EPD(80%),SPH,hbl,pyr,gar.
96R279				no grains selected						10.97	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl.
96R280				2						10.78	MIN:HEM,GOE,ORGAR,PKGAR(<1%rd),epd,hbl.
96R281	1		2							10.12	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl. 2 ilmenite in vial A (very black with weathered rims).
96R282		1		3	1					10.78	MIN:ORGAR,PKGAR(<2%rd),HEM,EPD,goe,hbl,dps.
96R283		1		1		1				10.27	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl. 1 chromite.
96R284					1					10.79	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,goe,hbl,dps.
96R285		1		4	1					10.23	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,ilm,epd.
96R286					2					10.49	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl. Both garnets should be PROBED.
96R287								1		10.62	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl. Colourless mineral in Other(??)
96R288				1						8.88	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl.
96R289				no grains selected						10.39	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl.
96R290				1						10.34	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl.
96R291								1		5.34	MIN:HEM,ORGAR,PKGAR(<1%rd),epd,goe,hbl. Twinned, light blue spinel with very high relief in Other
96R292				1						10.53	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96R293		1								10.67	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96R294				1				1		10.32	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,dps. 1 gahnite.
96R295	1	1							1	10.58	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,goe. 1 gold grain 400x300μm (at shaker table).
96R296				no grains selected						10.11	MIN:ORGAR,PKGAR(<1%rd),HEM,goe,epd,hbl.
96R297		1				1		1		10.69	MIN:ORGAR,PKGAR(<2%rd),HEM,epd,goe,hbl,dps. 1 gahnite. Pyrope is a lilac colour.
96R298								2		5.89	MIN:HBL(80%),epd,pyr,gar. 2 sulphide grains.
96R299	2			1	1					10.42	MIN:ORGAR,PKGAR(<1%rd),EPD,HBL,hem,goe.
96R300				no grains selected						3.12	MIN:EPD(80%),orgar,pkgar(<1%rd),hbl.
96R301				4	1					9.71	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,goe,hbl.
96R302				2						1.22	MIN:HEM,ORGAR,PKGAR(<1%rd),EPD,hbl,goe,dps.
96R303				1						2.52	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,dps,sph.
96R304				1						10.38	MIN:ORGAR,PKGAR(<1%rd),HBL,EPD,hem,goe,dps.
96R305				no grains selected						7.96	MIN:ORGAR,PKGAR(<1%rd),HEM,epd,hbl,dps,pyr.
96R306	1									4.64	MIN:ORGAR,PKGAR(<1%rd),EPD,hbl,hem,sph,goe.
96R307								4		7.82	MIN:ZIRCON(60%),HEM,pkgar,ilm,epd.
96R308					1					2.2	MIN:ORGAR,PKGAR(<1%rd),EPD,SPH,hbl,ilm,pyr.
96R309				4						6.1	MIN:ORGAR,PKGAR(<1%rd),HEM,GOE,epd,hbl,dps.
96R310				no grains selected						0.13	MIN:HEM,GOE,epd,hbl,gar.
96R311		1								10.65	MIN:ORGAR,PKGAR(<1%rd),HEM,EPD,hbl,goe,sph.

Appendix F

Proportional Dot Maps for Geochemistry Results from the –80 Mesh Bulk Samples and –60 Mesh Non-Magnetic Tabled Concentrates

Plots include

- **From the –80 mesh bulk samples:**

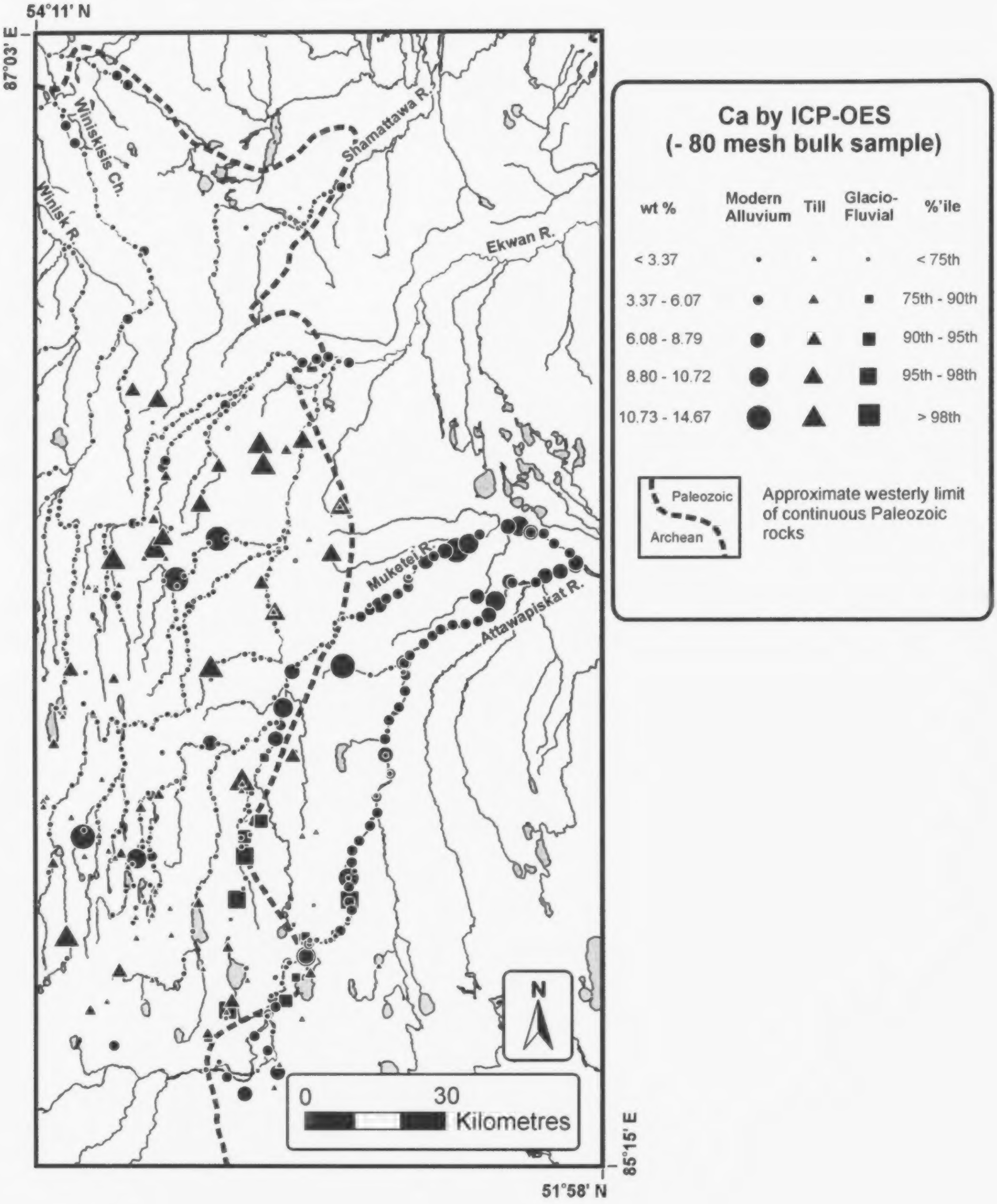
  Ca, Mg, Al, Na, K, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Pb, As, Mo, Hf, Sc, Sr, P, Au, Total REEs, Y, Th, U

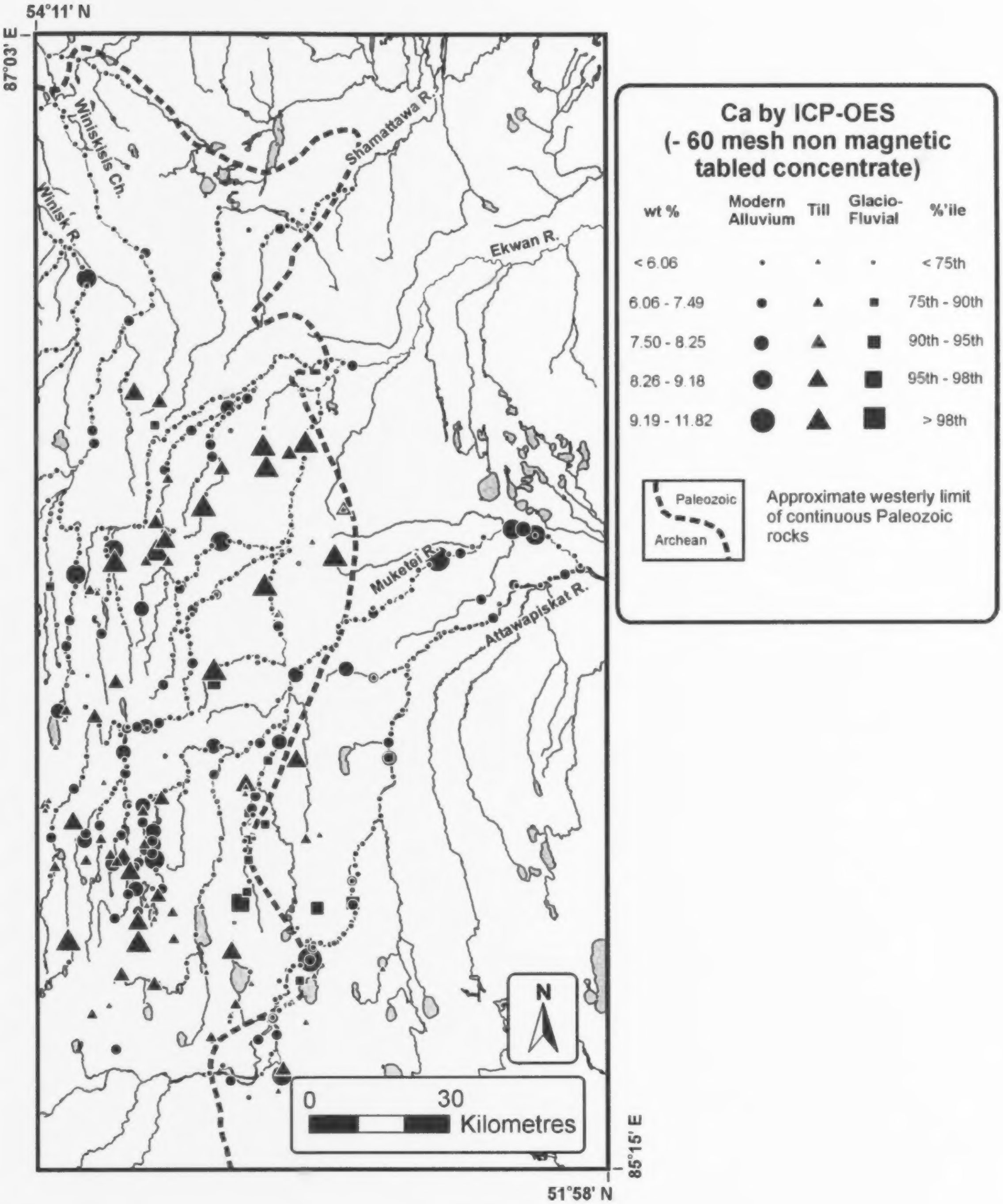
- **From the –60 mesh non-magnetic tabled concentrate data:**

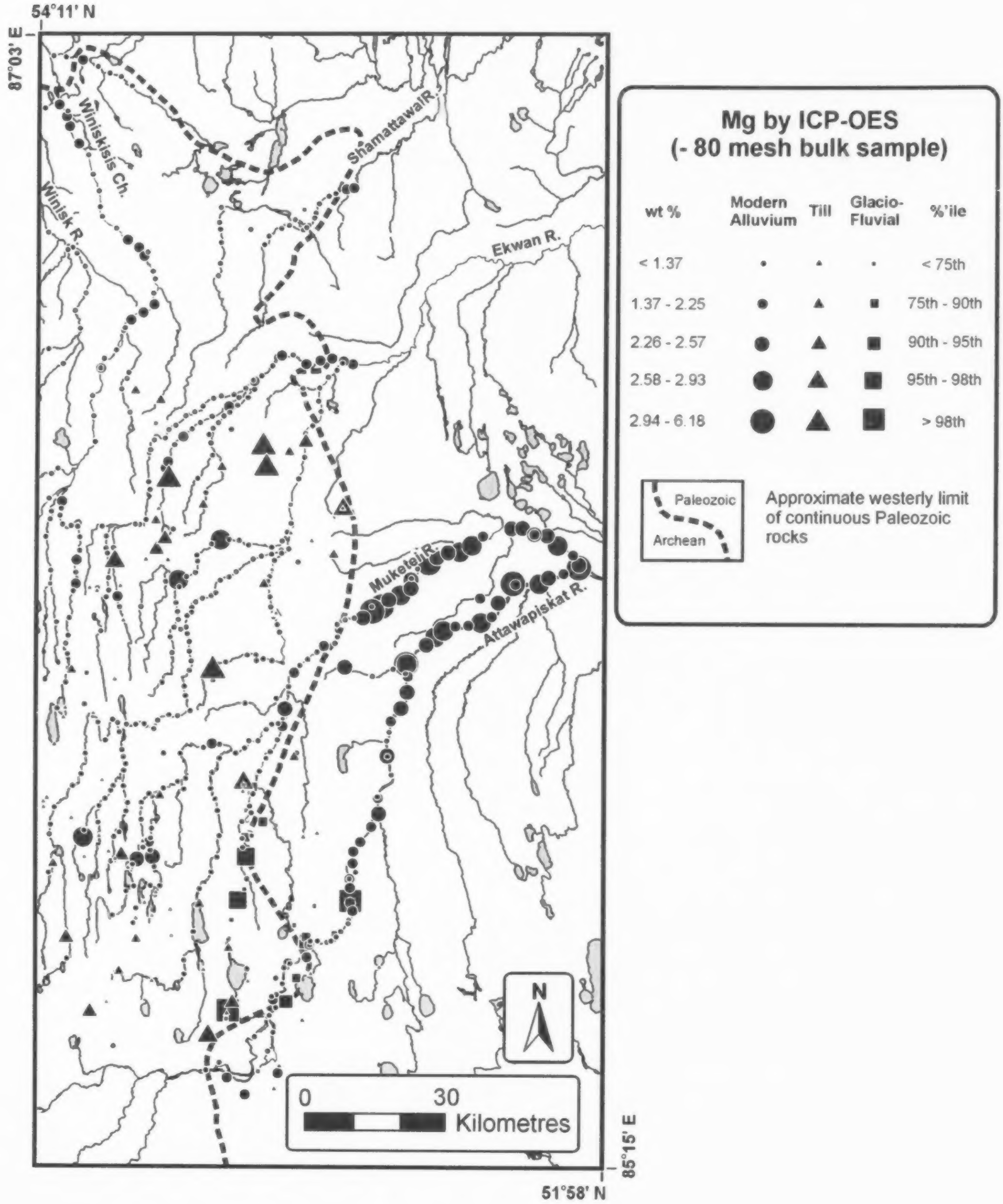
  Ca, Mg, Al, Na, K, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Pb, As, Mo, Hf, Sc, Sr, P, Au, Total REEs, Y, Th, U, Ag

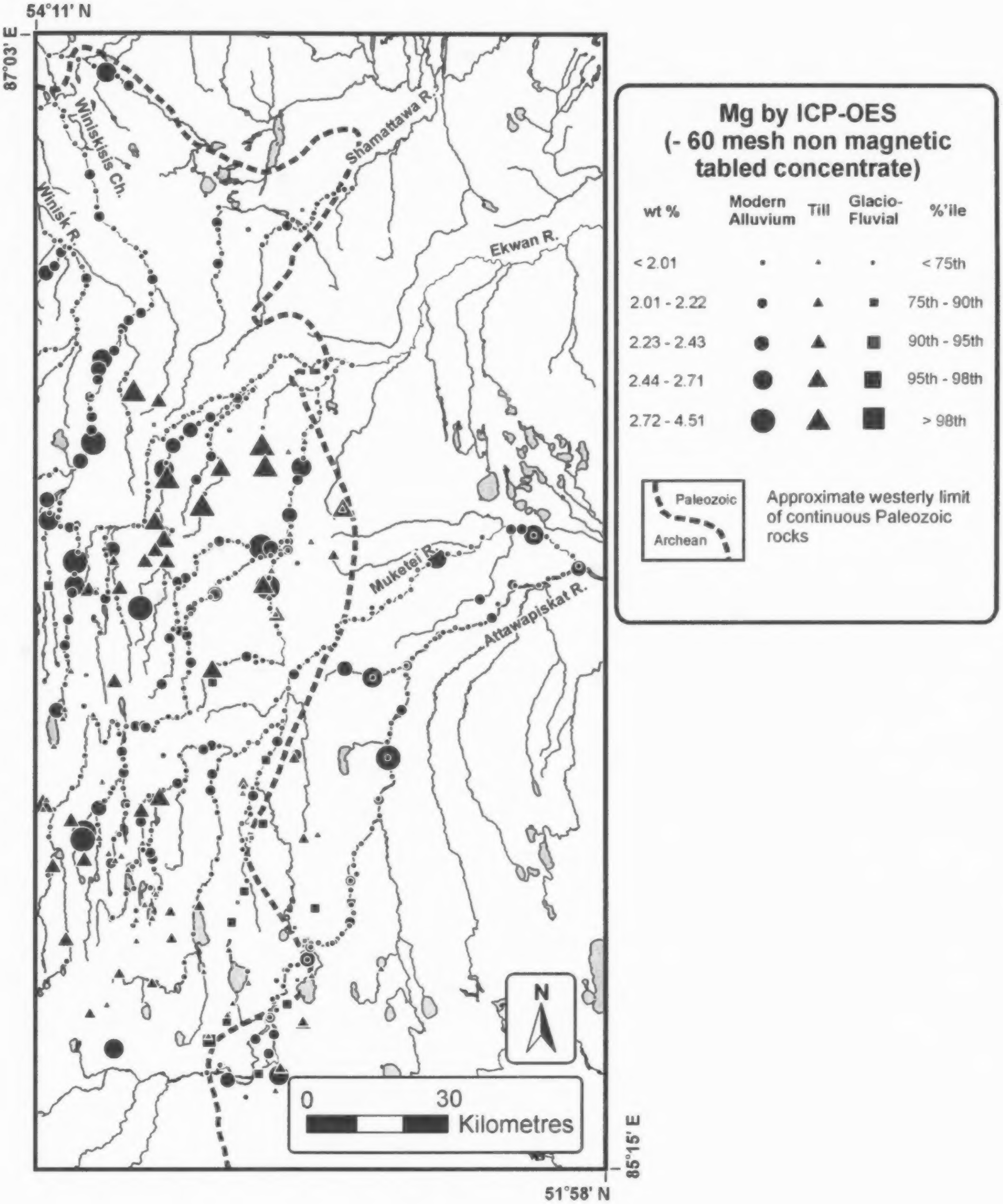
- **Additional plot:**

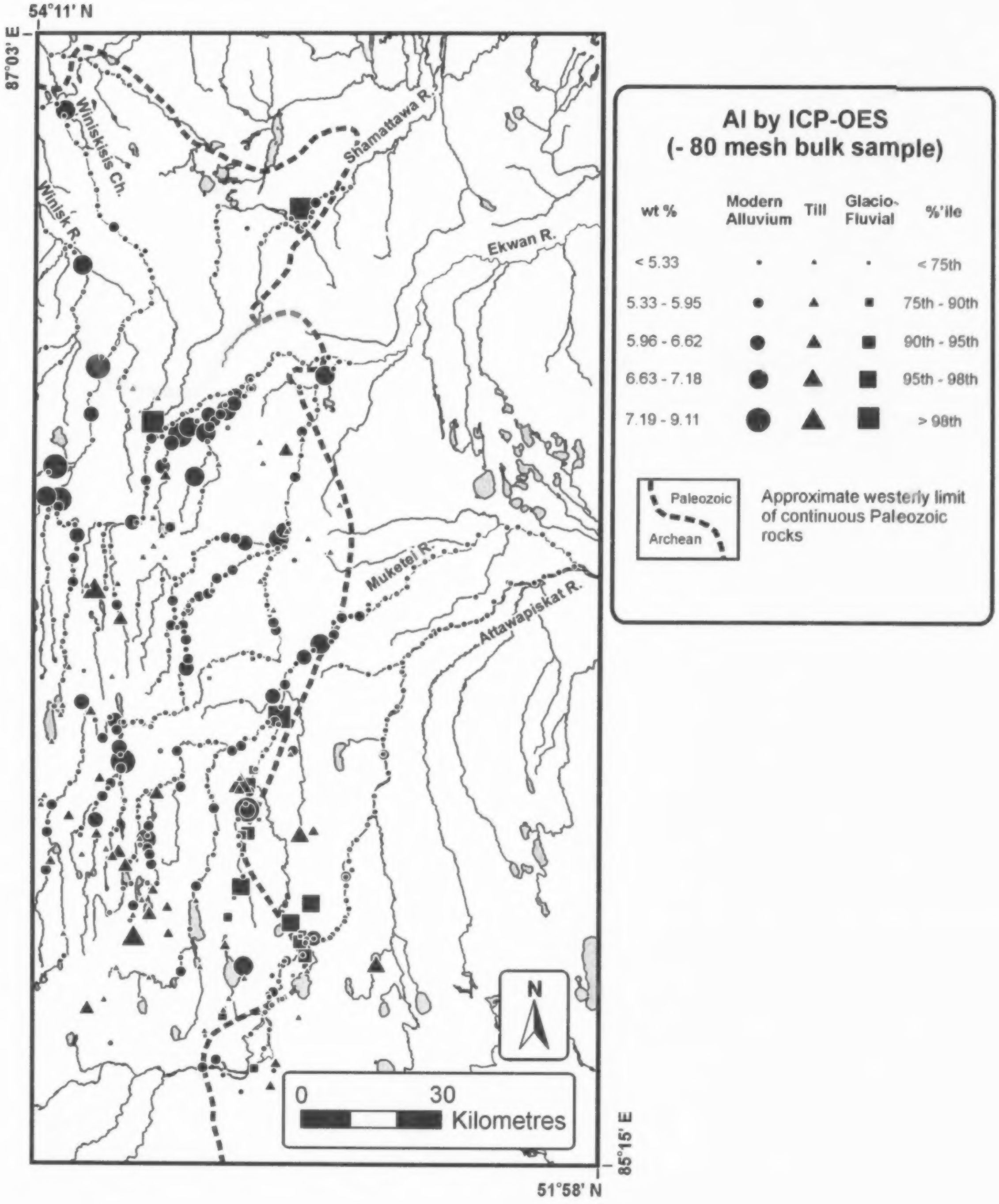
  Total Magnetic Fraction from the Consorminex Mineralogical Data

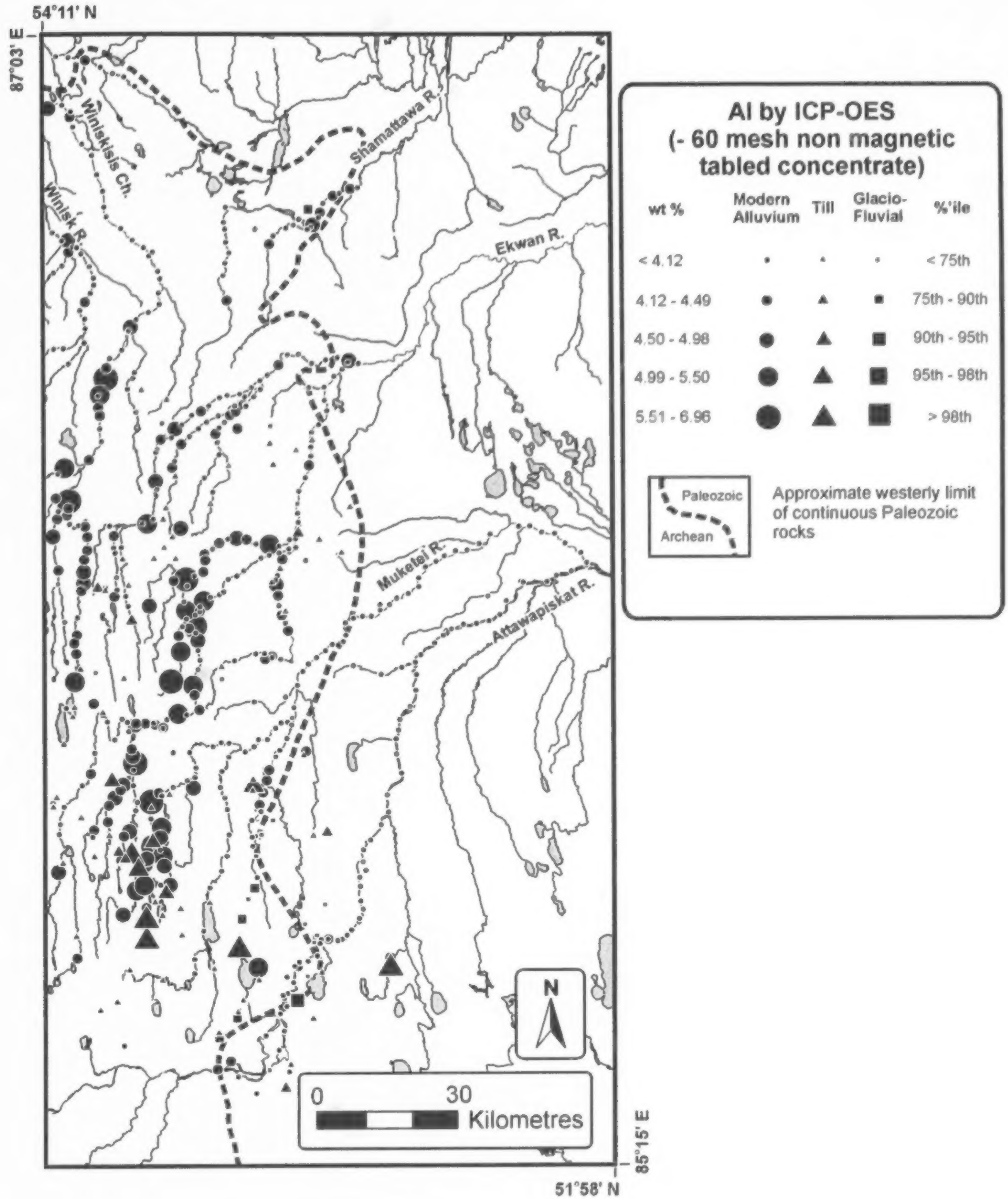

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Ca by ICP-OES
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 3.37
< 75th
3.37 - 6.07
75th - 90th
6.08 - 8.79
90th - 95th
8.80 - 10.72
95th - 98th
10.73 - 14.67
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

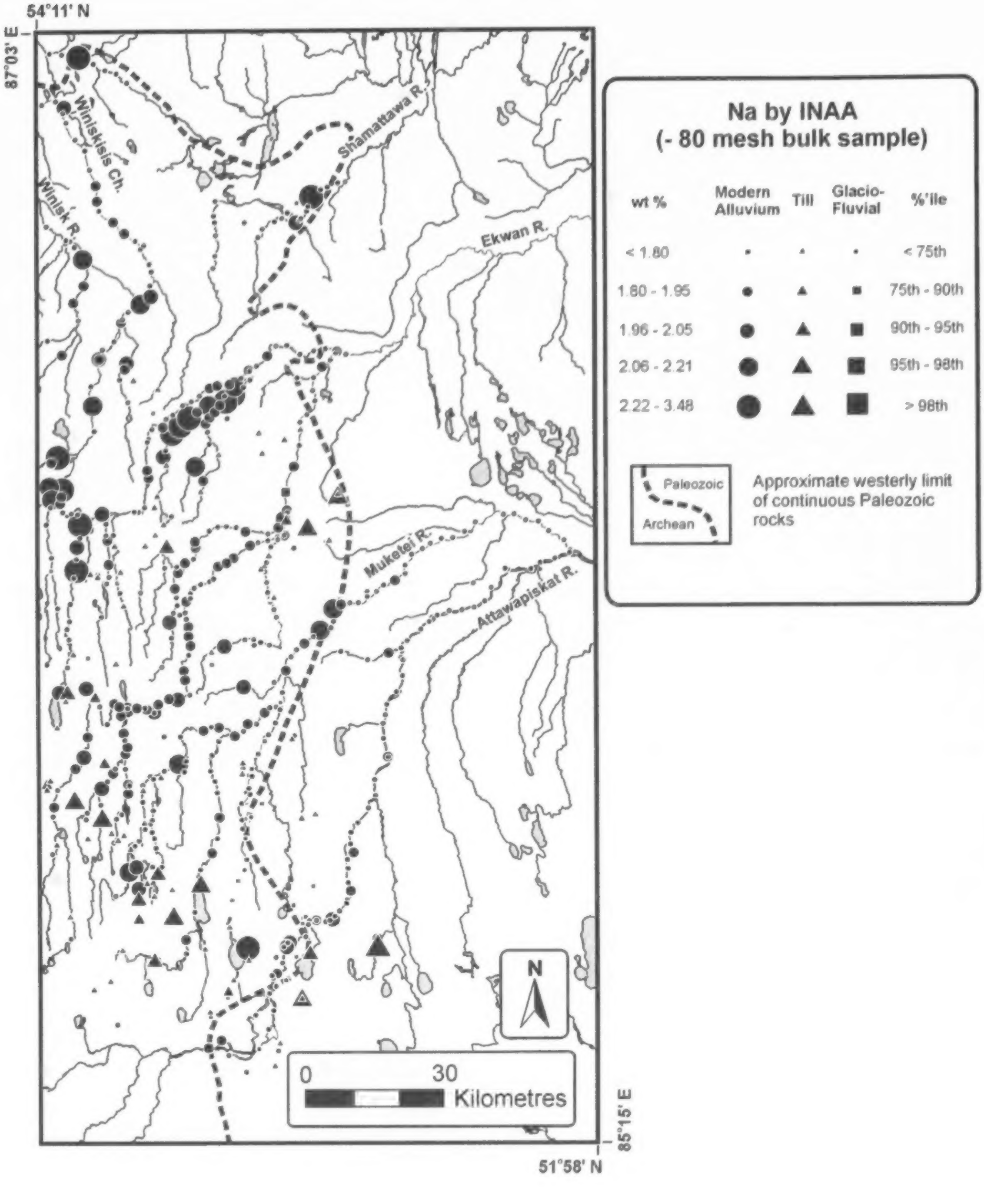

54°11' N
87°03' E
Winisk R.
Winiskisis Ch.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Ca by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 6.06
< 75th
6.06 - 7.49
75th - 90th
7.50 - 8.25
90th - 95th
8.26 - 9.18
95th - 98th
9.19 - 11.82
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

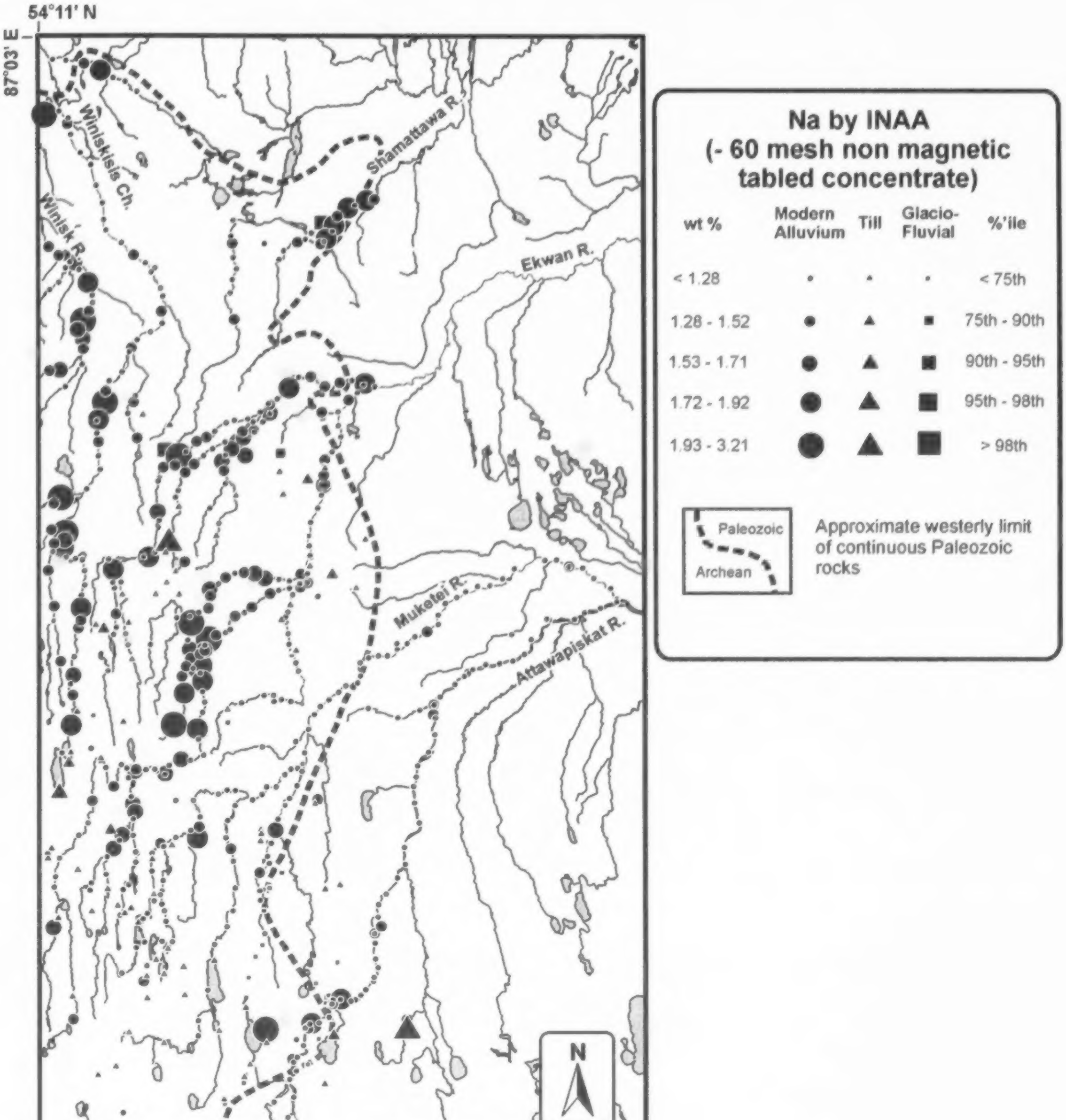

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Mg by ICP-OES
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1.37
< 75th
1.37 - 2.25
75th - 90th
2.26 - 2.57
90th - 95th
2.58 - 2.93
95th - 98th
2.94 - 6.18
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

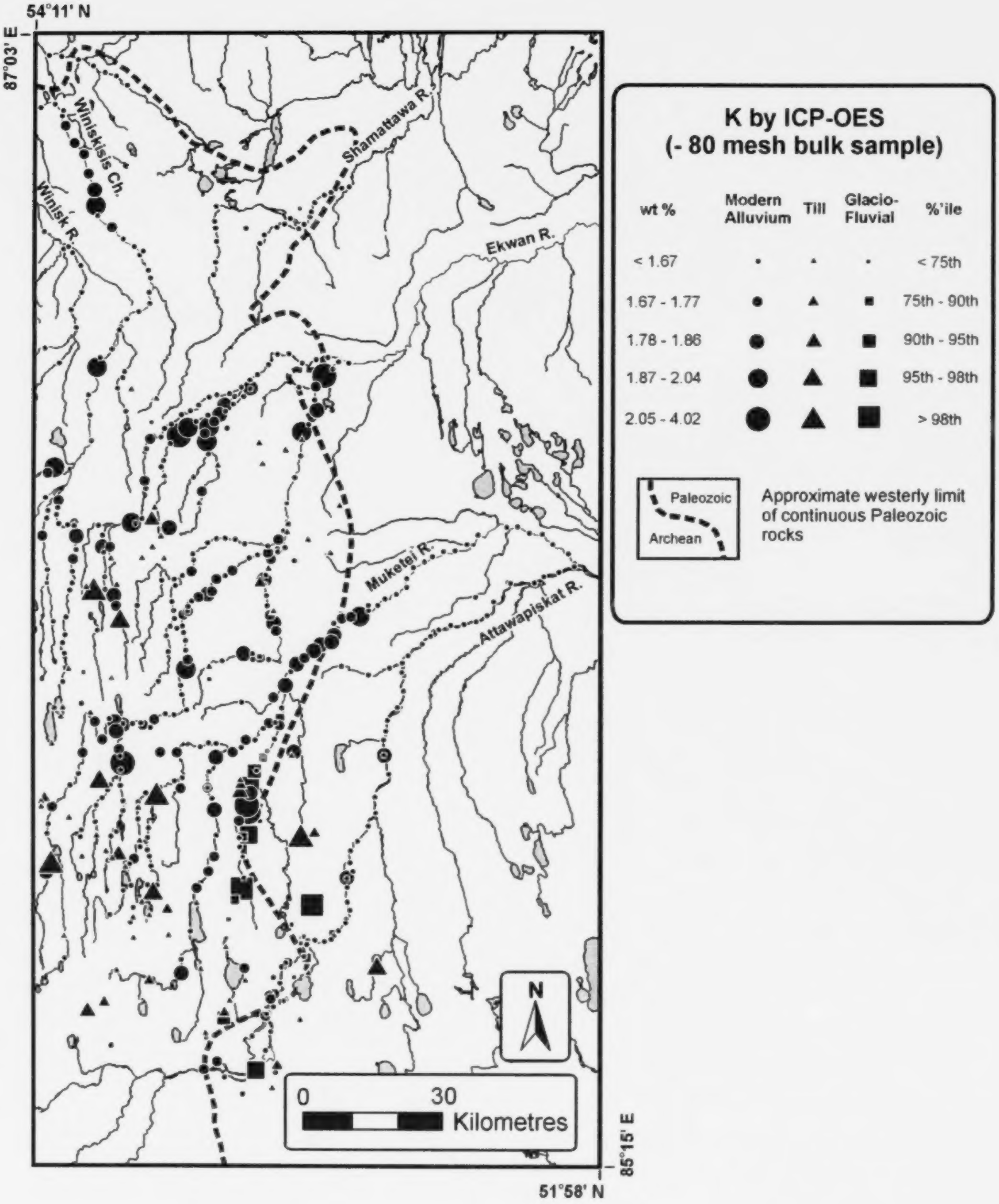

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Mg by ICP-OES
(- 60 mesh non magnetic
tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 2.01
< 75th
2.01 - 2.22
75th - 90th
2.23 - 2.43
90th - 95th
2.44 - 2.71
95th - 98th
2.72 - 4.51
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

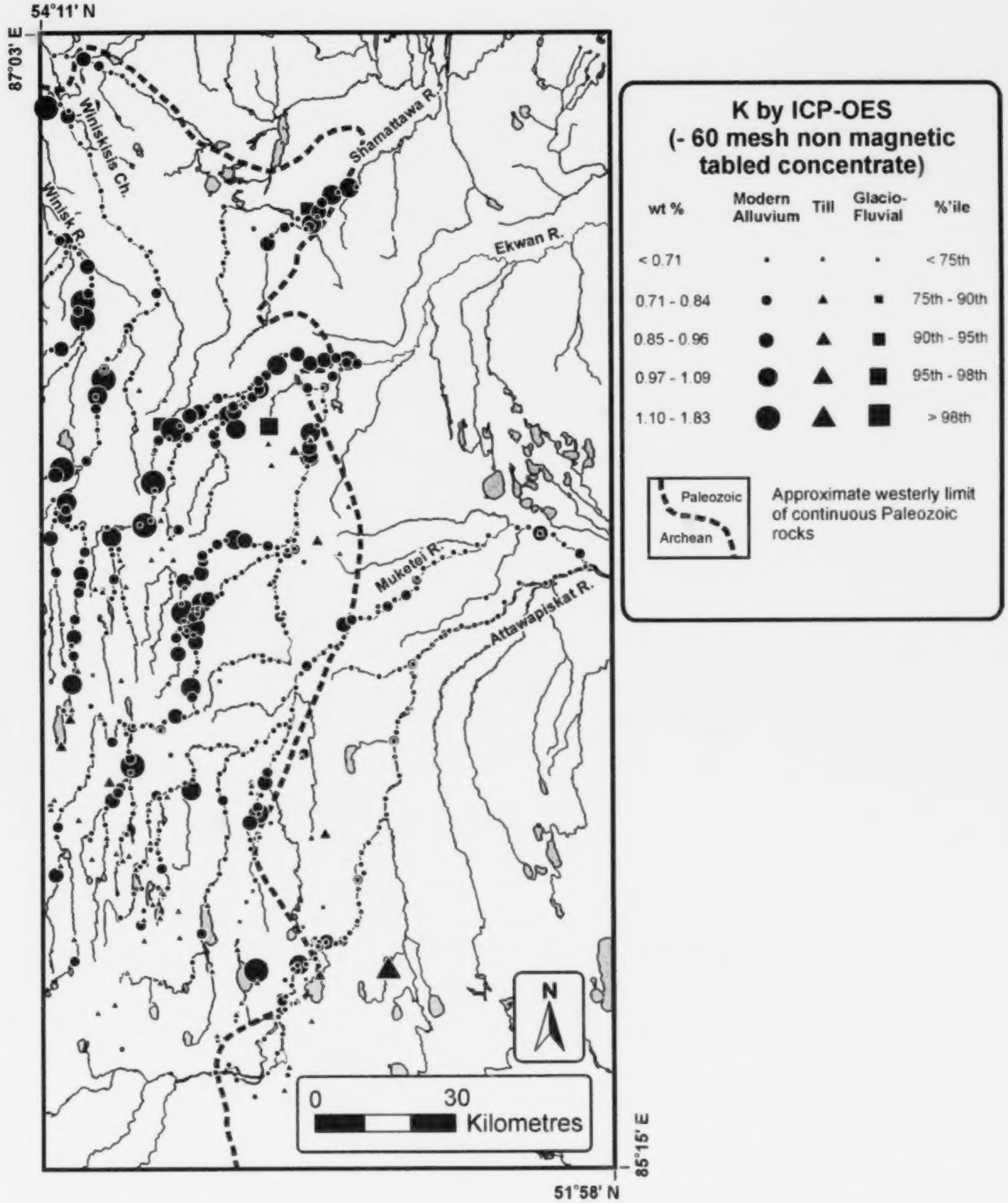

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Al by ICP-OES
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 5.33
< 75th
5.33 - 5.95
75th - 90th
5.96 - 6.62
90th - 95th
6.63 - 7.18
95th - 98th
7.19 - 9.11
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

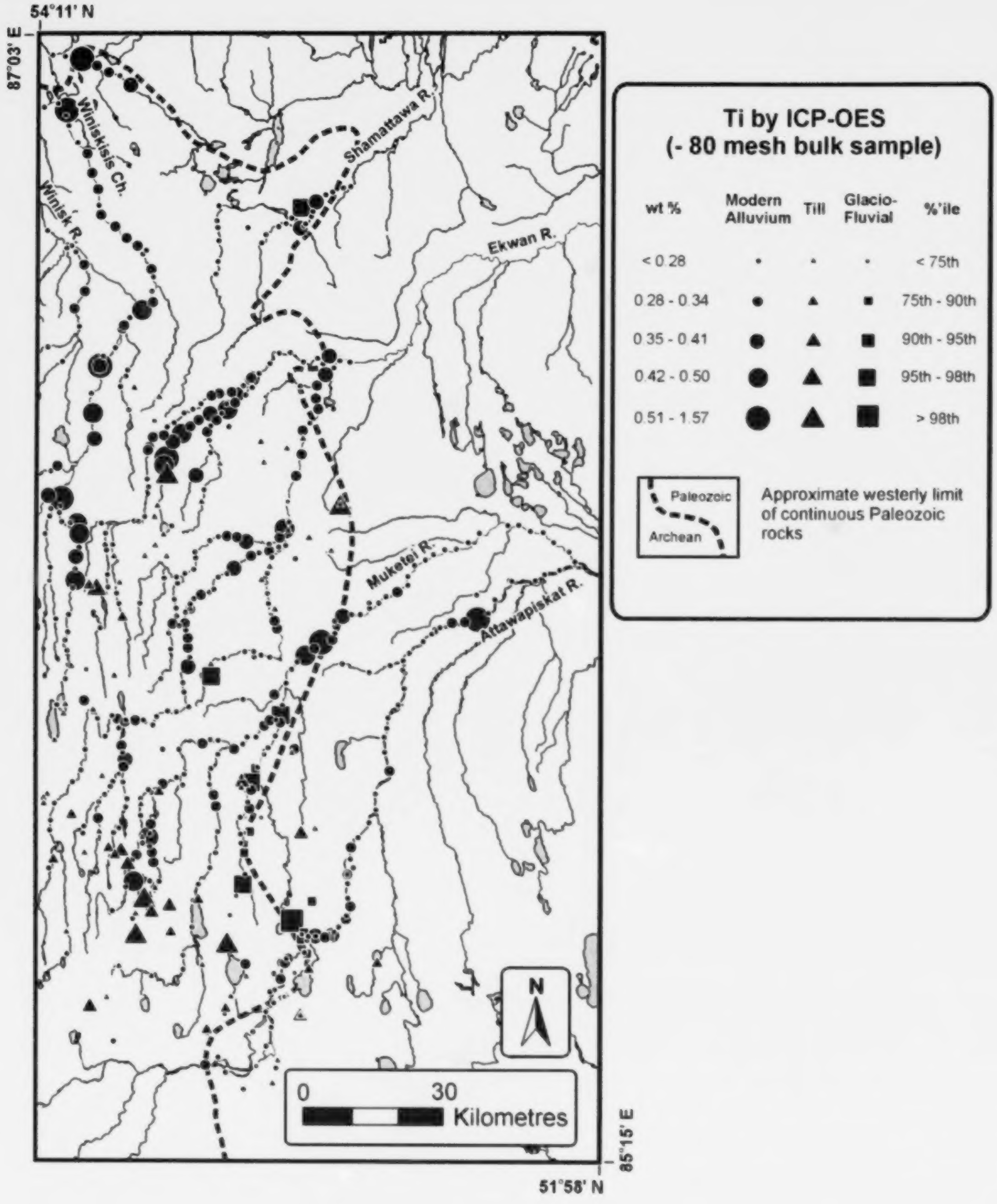

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Al by ICP-OES
(- 60 mesh non magnetic
tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 4.12
< 75th
4.12 - 4.49
75th - 90th
4.50 - 4.98
90th - 95th
4.99 - 5.50
95th - 98th
5.51 - 6.96
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres
85°15' E
51°58' N

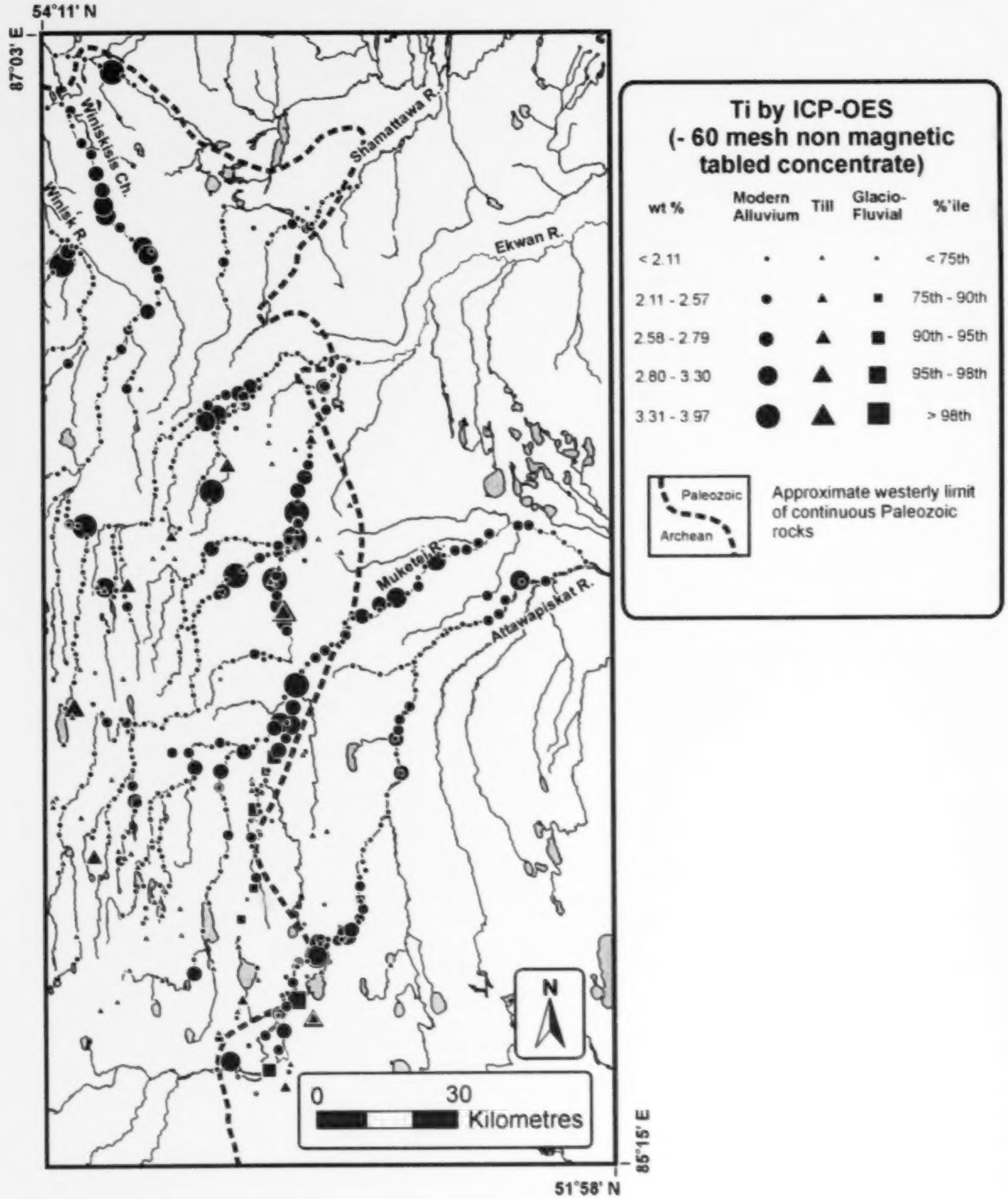
54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Na by INAA
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1.80
< 75th
1.80 - 1.95
75th - 90th
1.96 - 2.05
90th - 95th
2.06 - 2.21
95th - 98th
2.22 - 3.48
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

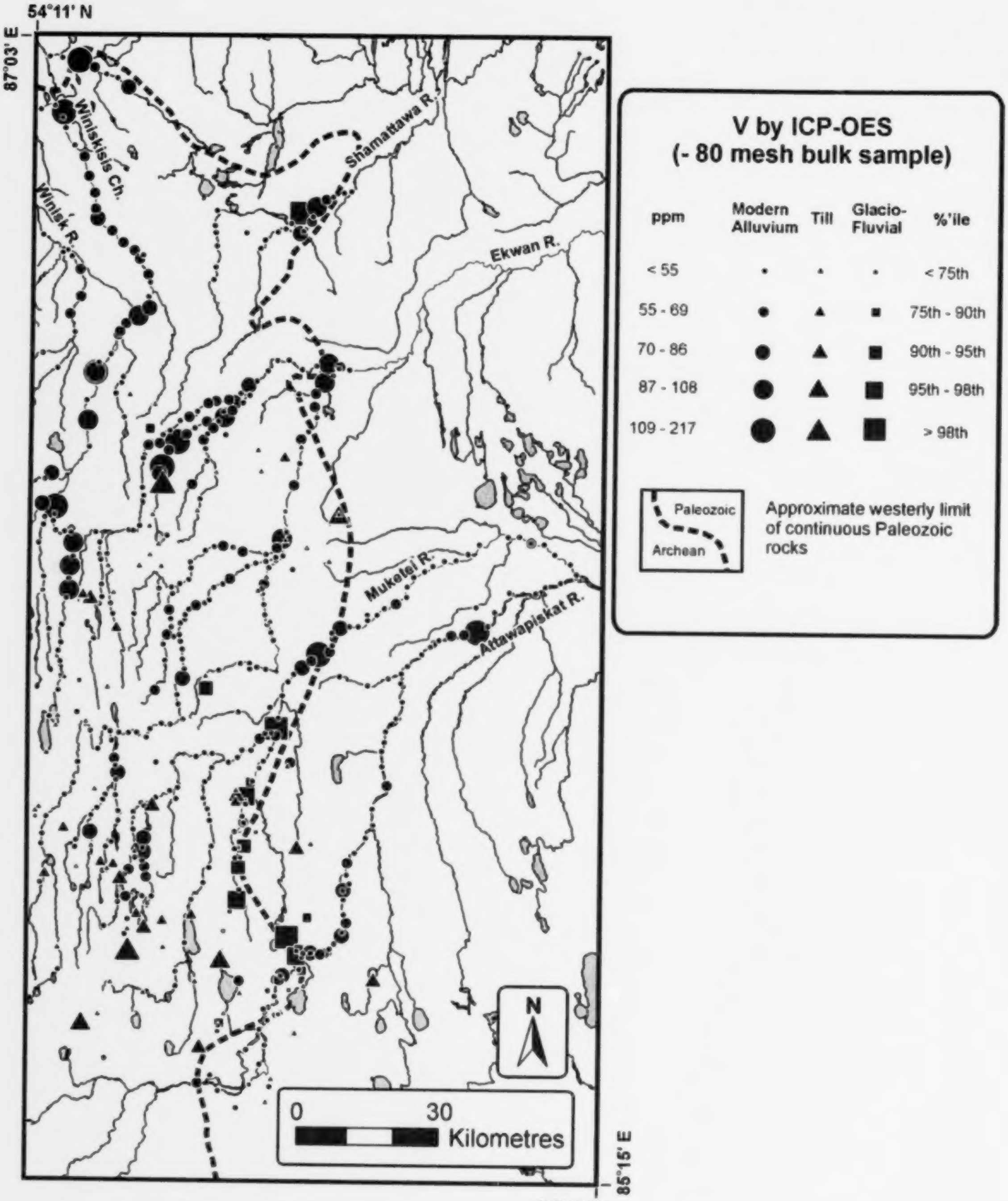

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Na by INAA
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1.28
< 75th
1.28 - 1.52
75th - 90th
1.53 - 1.71
90th - 95th
1.72 - 1.92
95th - 98th
1.93 - 3.21
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

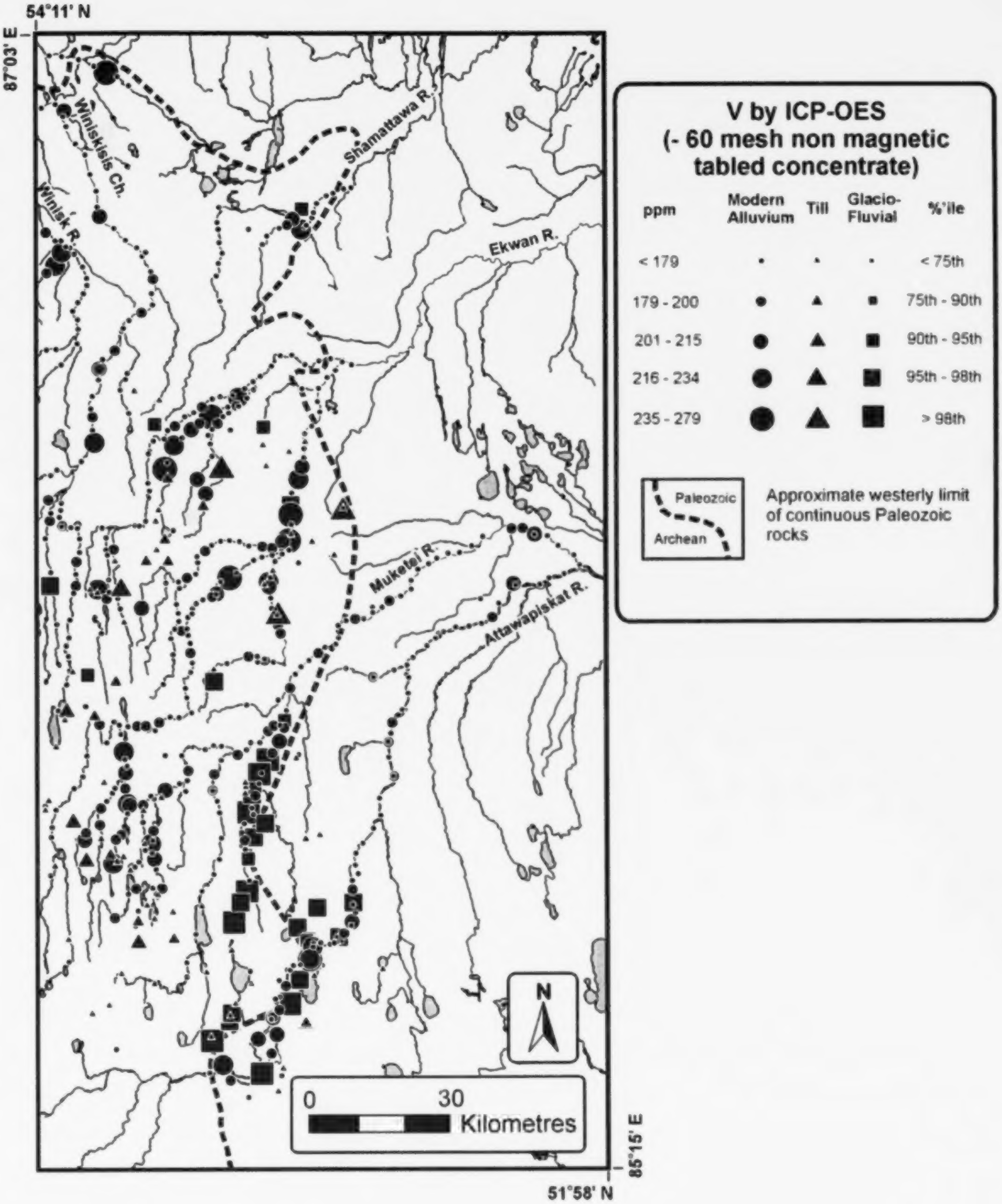

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
0
30
Kilometres
N
K by ICP-OES
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1.67
< 75th
1.67 - 1.77
75th - 90th
1.78 - 1.86
90th - 95th
1.87 - 2.04
95th - 98th
2.05 - 4.02
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

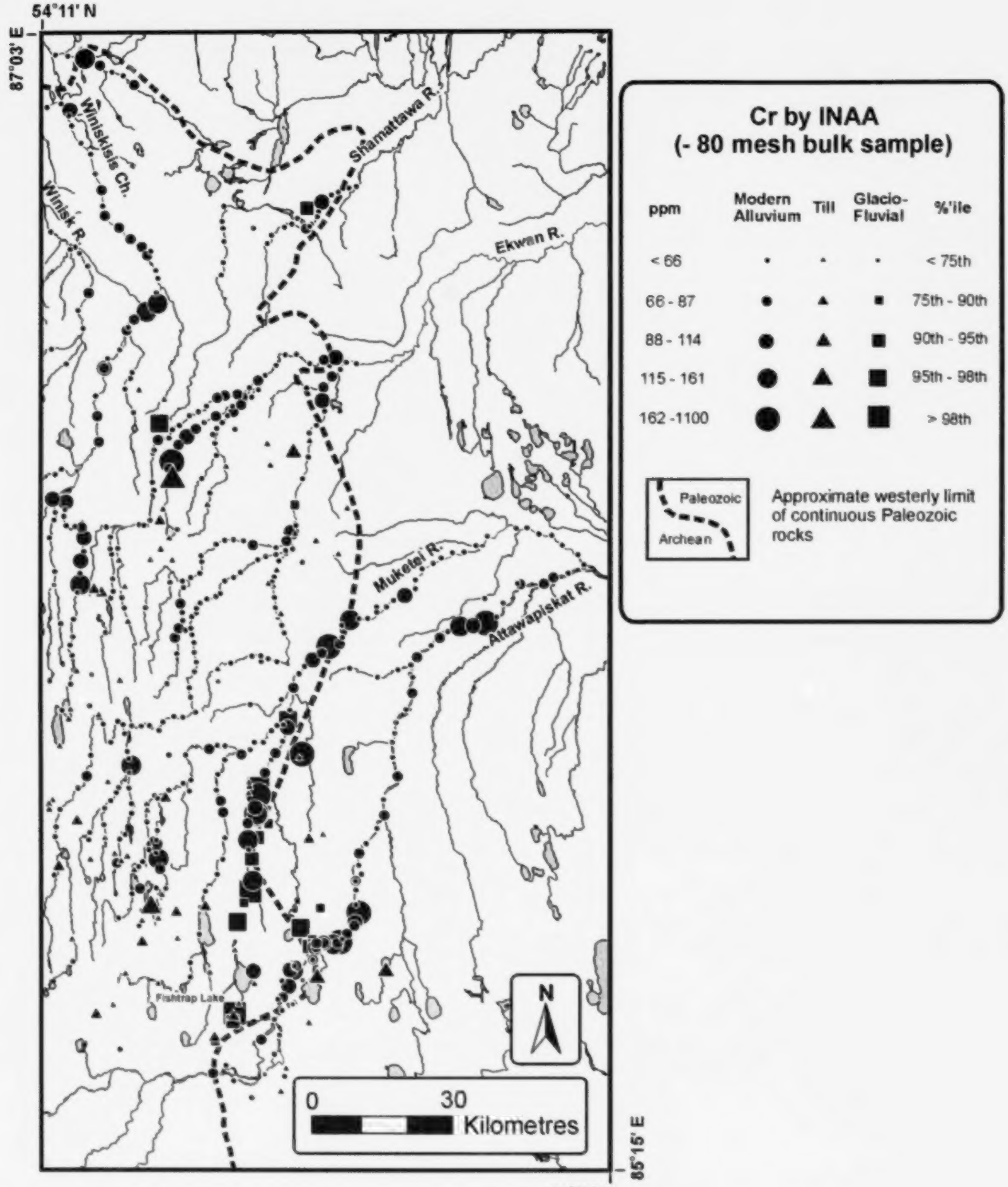

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
K by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 0.71
< 75th
0.71 - 0.84
75th - 90th
0.85 - 0.96
90th - 95th
0.97 - 1.09
95th - 98th
1.10 - 1.83
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

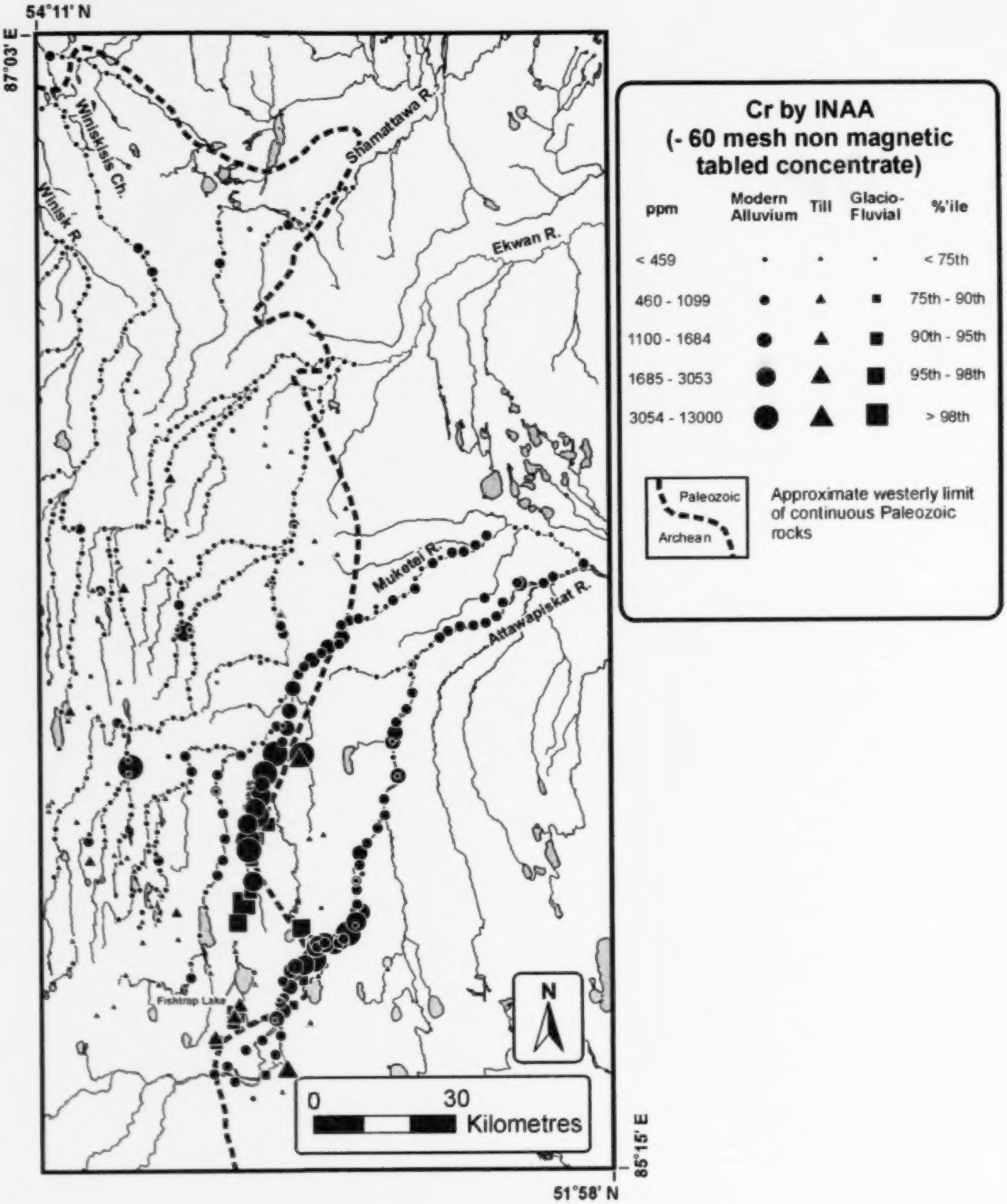

54°11' N
87°03' E
Shamattawa R.
Winiskisis Ch.
Winisk R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Ti by ICP-OES
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 0.28
< 75th
0.28 - 0.34
75th - 90th
0.35 - 0.41
90th - 95th
0.42 - 0.50
95th - 98th
0.51 - 1.57
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

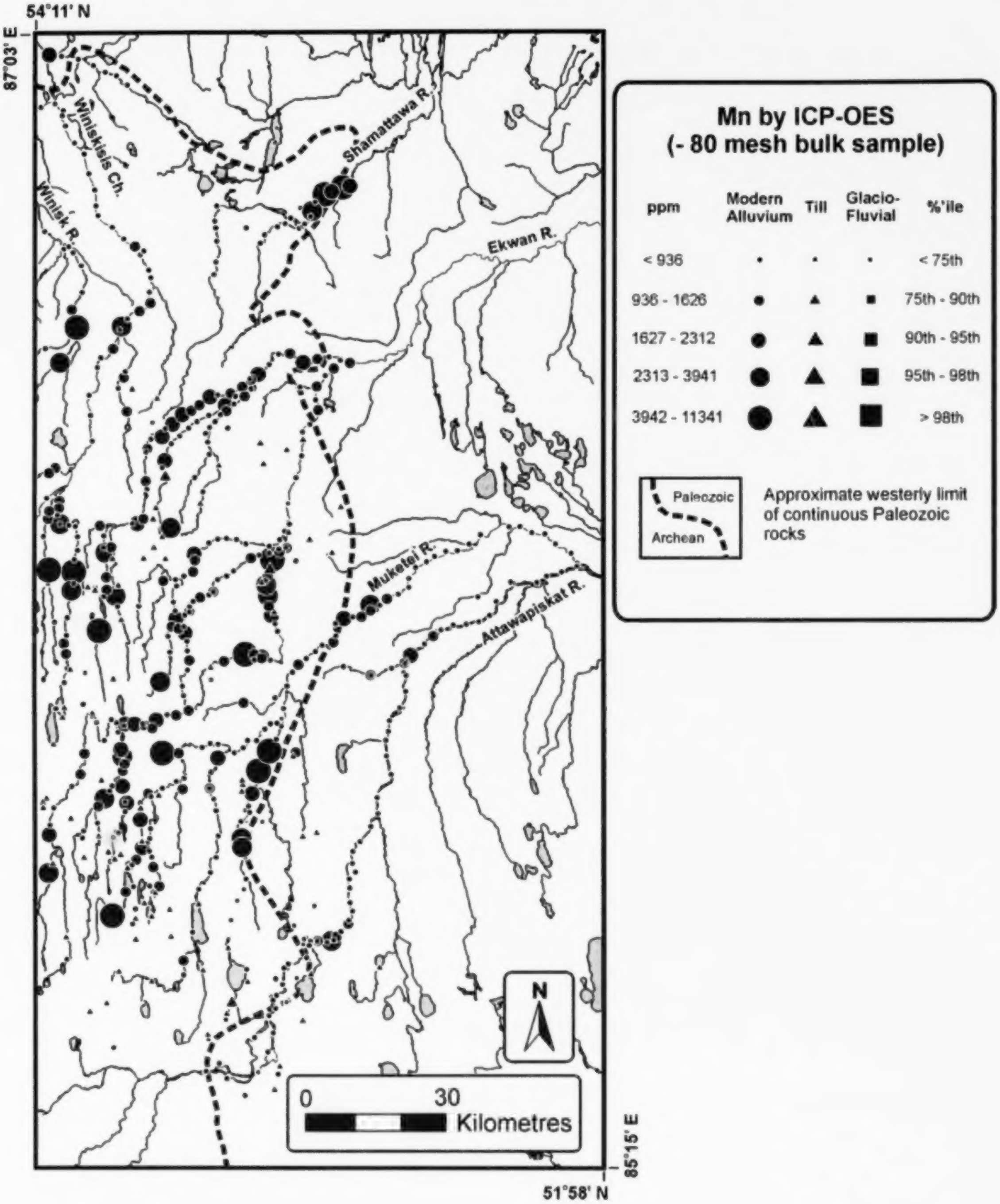

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Ti by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 2.11
< 75th
2.11 - 2.57
75th - 90th
2.58 - 2.79
90th - 95th
2.80 - 3.30
95th - 98th
3.31 - 3.97
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

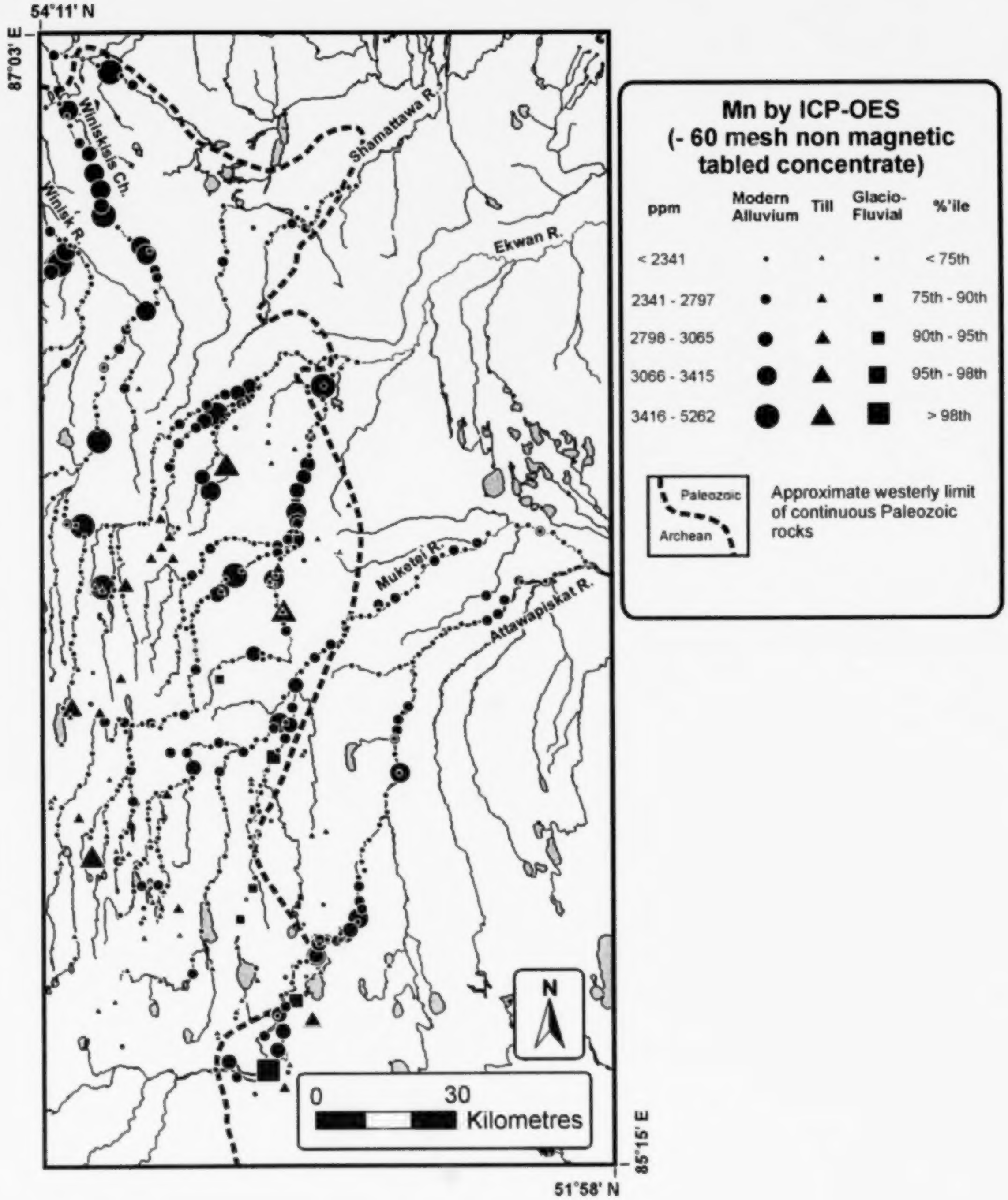

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Mukelel R.
Attawapiskat R.
N
0
30
Kilometres
V by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 55
< 75th
55 - 69
75th - 90th
70 - 86
90th - 95th
87 - 108
95th - 98th
109 - 217
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

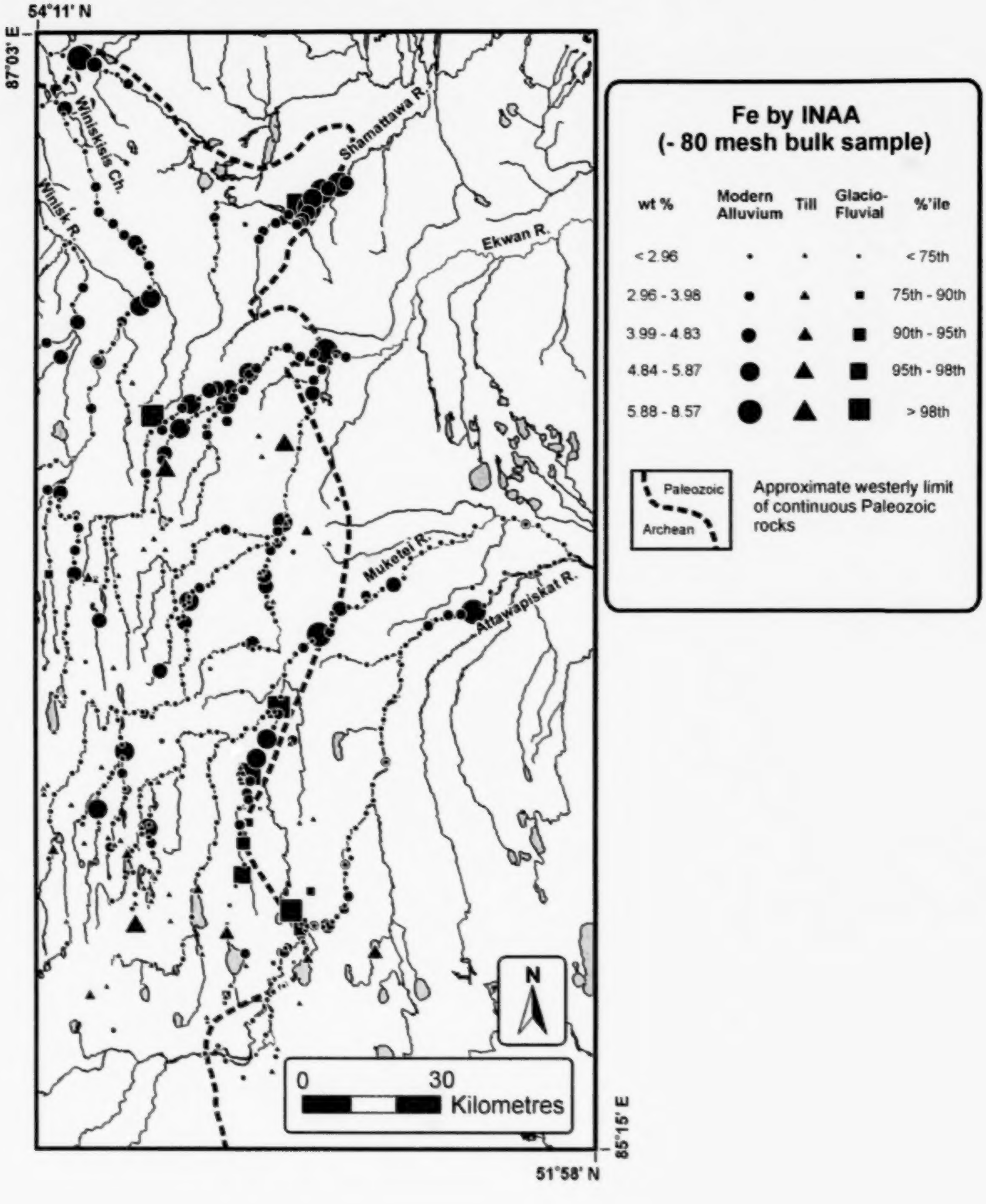

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
V by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 179 • ▲ ■ < 75th
179 - 200 ● ▲ ■ 75th - 90th
201 - 215 ● ▲ ■ 90th - 95th
216 - 234 ● ▲ ■ 95th - 98th
235 - 279 ● ▲ ■ > 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres
85°15' E
51°58' N

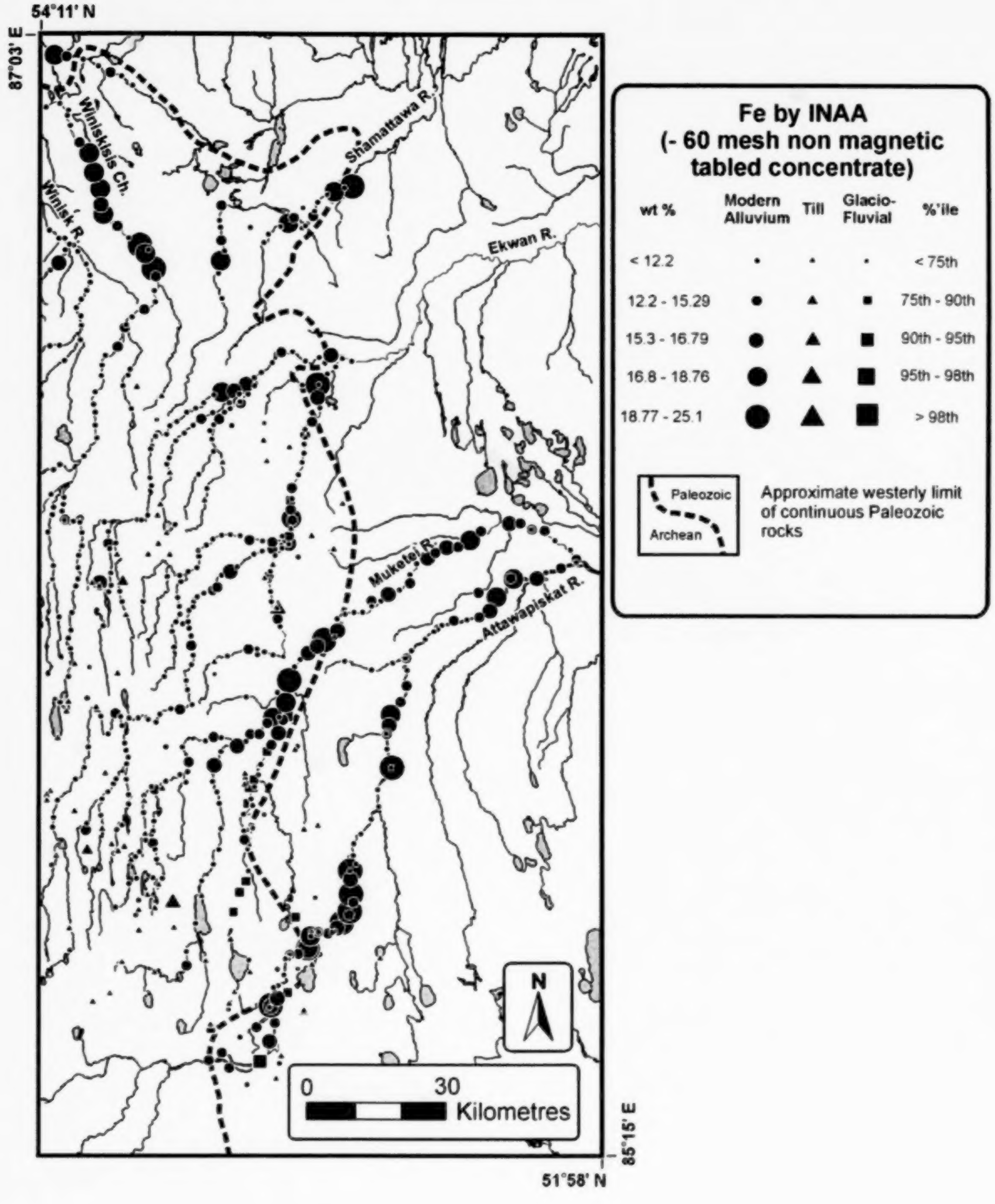

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Fishtrap Lake
N
0
30
Kilometres
85°15' E
51°58' N
Cr by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 66
< 75th
66 - 87
75th - 90th
88 - 114
90th - 95th
115 - 161
95th - 98th
162 - 1100
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

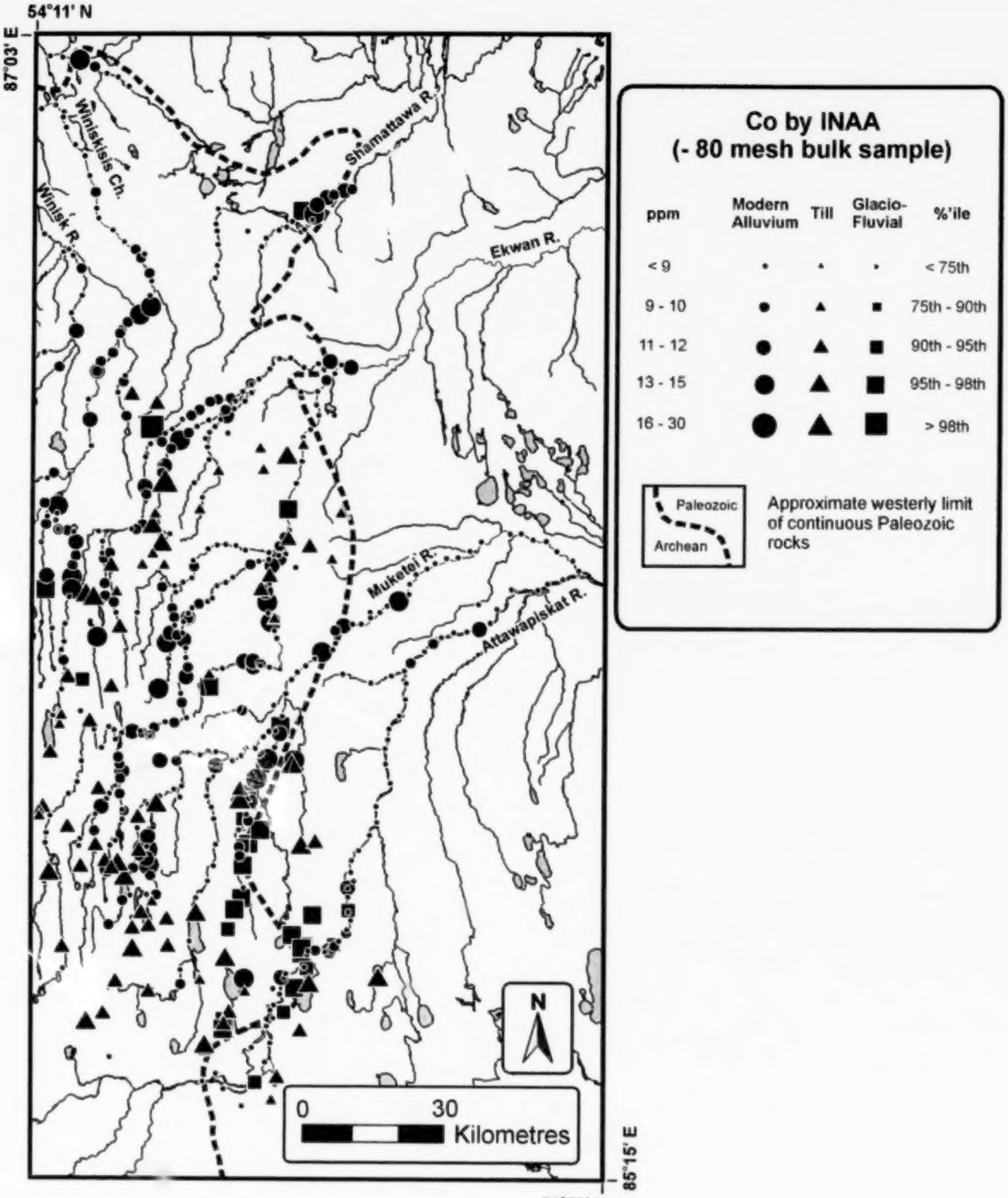

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Fishtrap Lake
N
0 30 Kilometres
Cr by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 459
< 75th
460 - 1099
75th - 90th
1100 - 1684
90th - 95th
1685 - 3053
95th - 98th
3054 - 13000
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

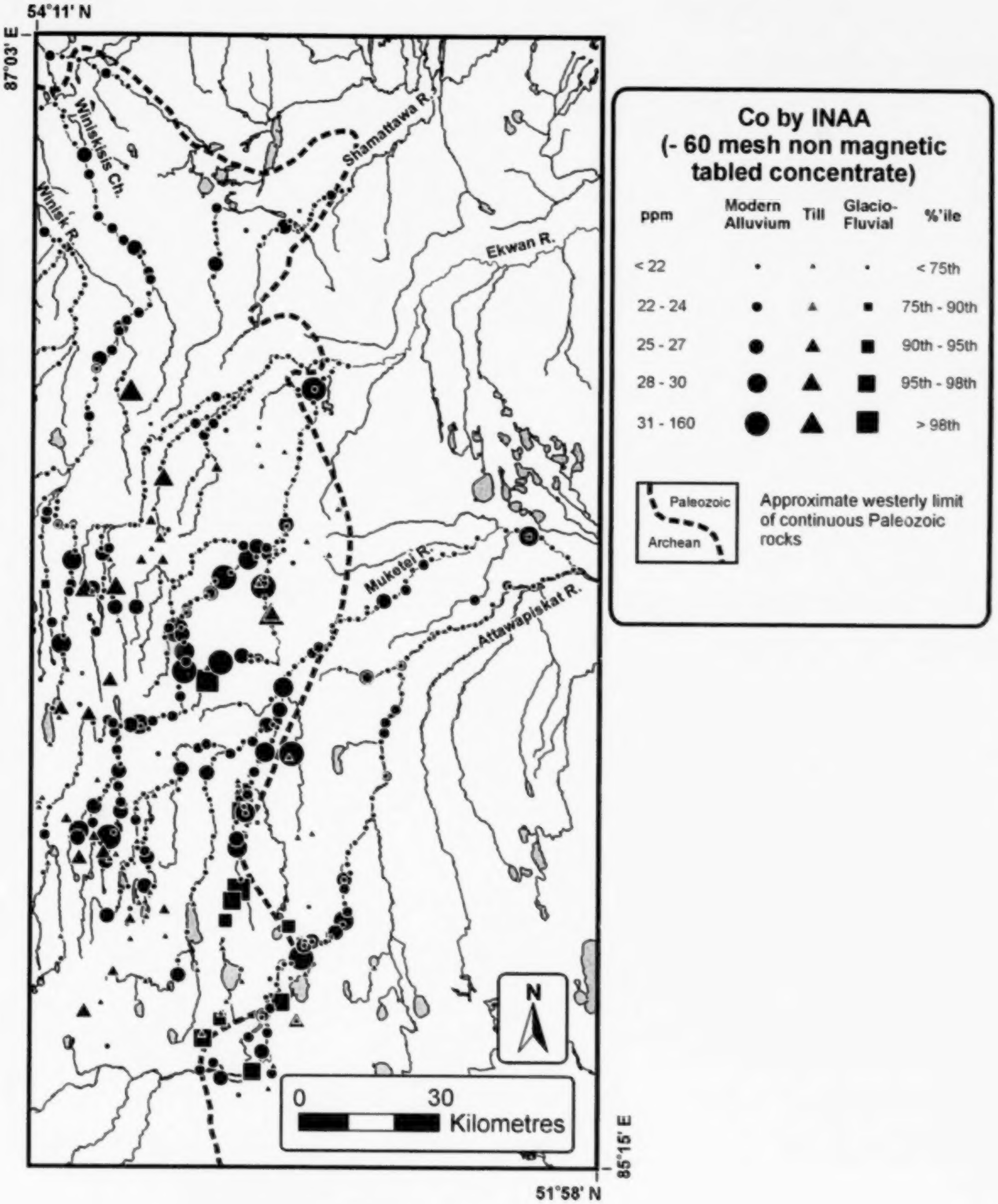

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Mn by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 936
< 75th
936 - 1626
75th - 90th
1627 - 2312
90th - 95th
2313 - 3941
95th - 98th
3942 - 11341
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

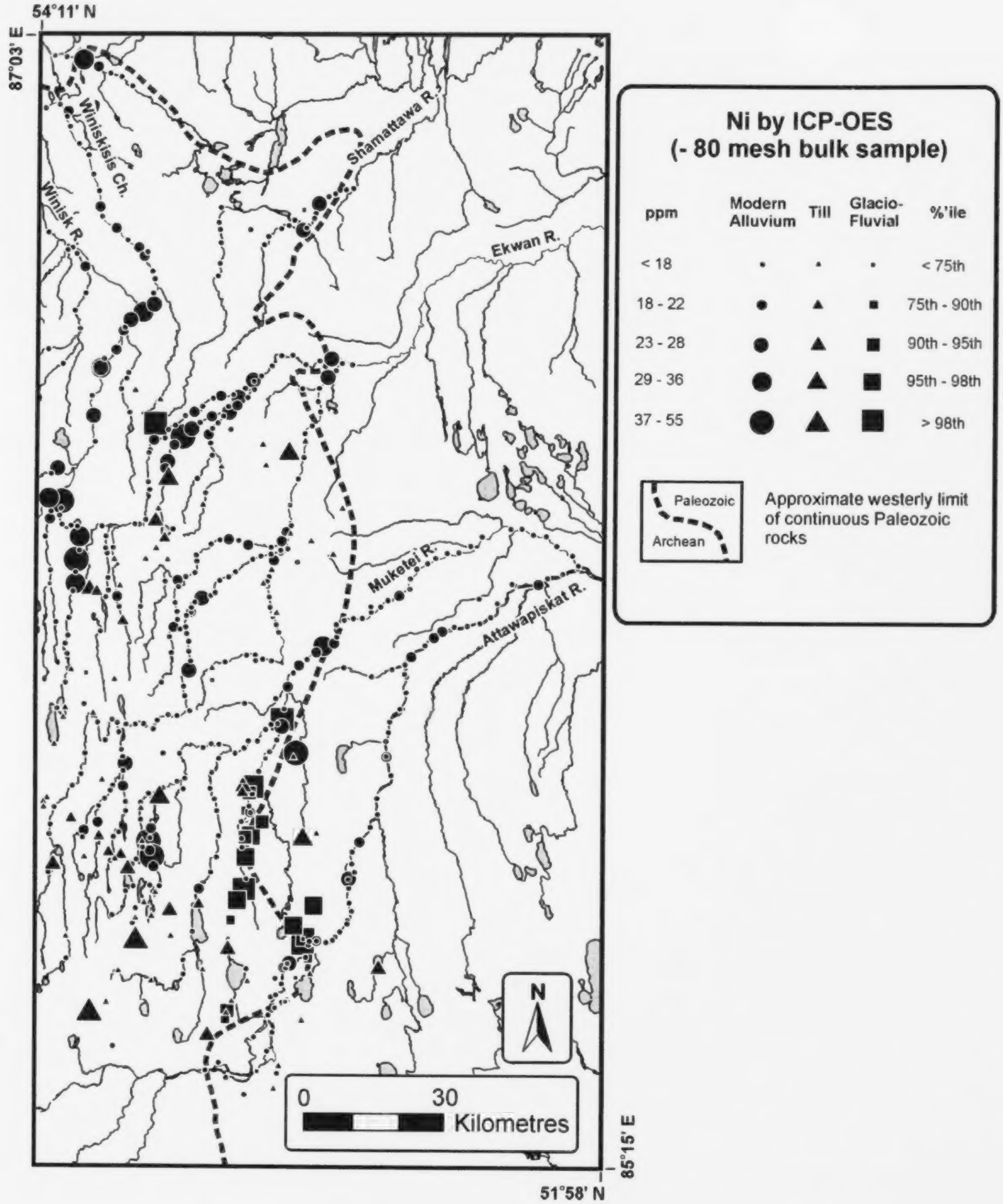

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Mn by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 2341
< 75th
2341 - 2797
75th - 90th
2798 - 3065
90th - 95th
3066 - 3415
95th - 98th
3416 - 5262
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

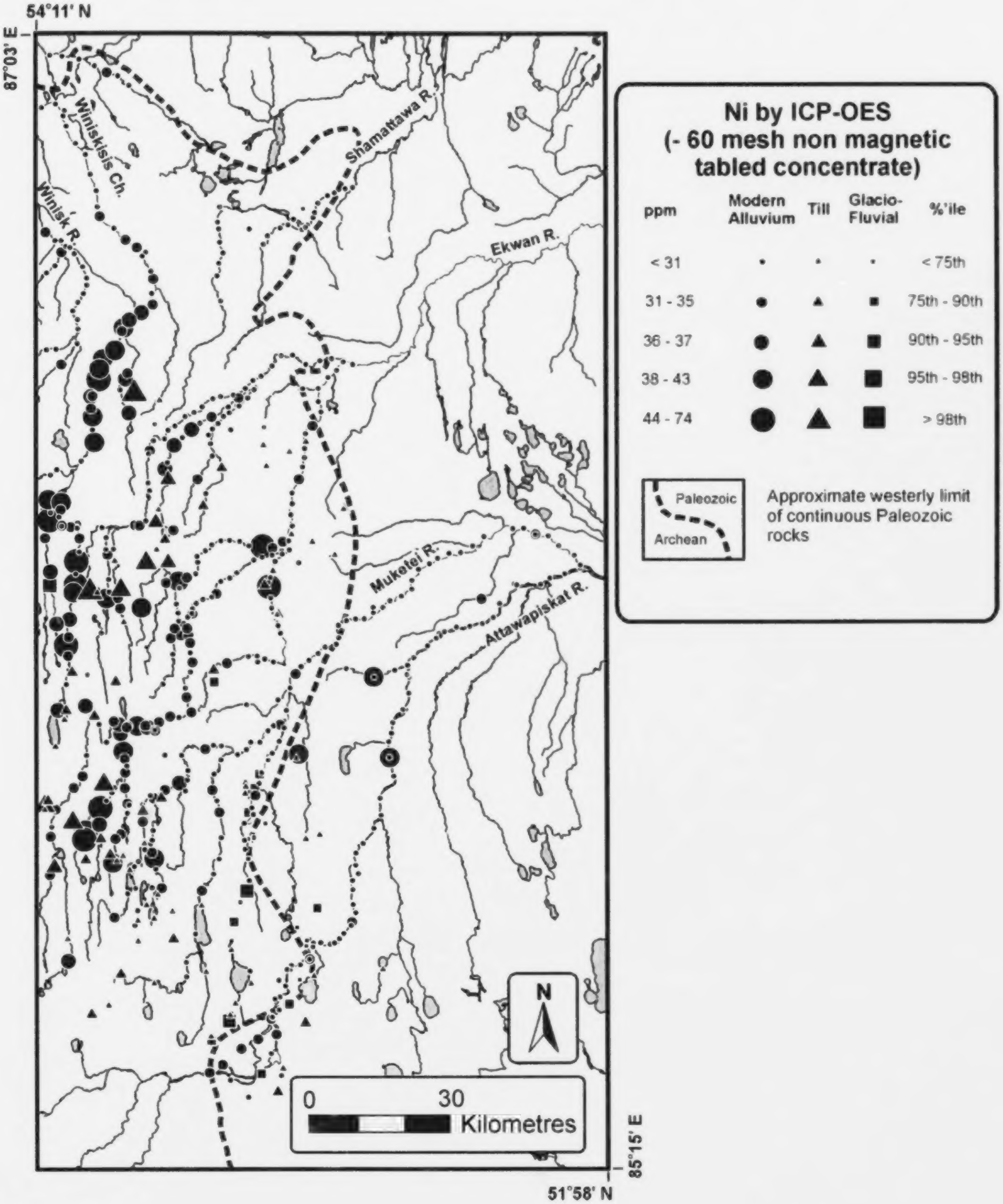

54°11' N
87°03' E
Fe by INAA
(- 80 mesh bulk sample)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 2.96
< 75th
2.96 - 3.98
75th - 90th
3.99 - 4.83
90th - 95th
4.84 - 5.87
95th - 98th
5.88 - 8.57
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N

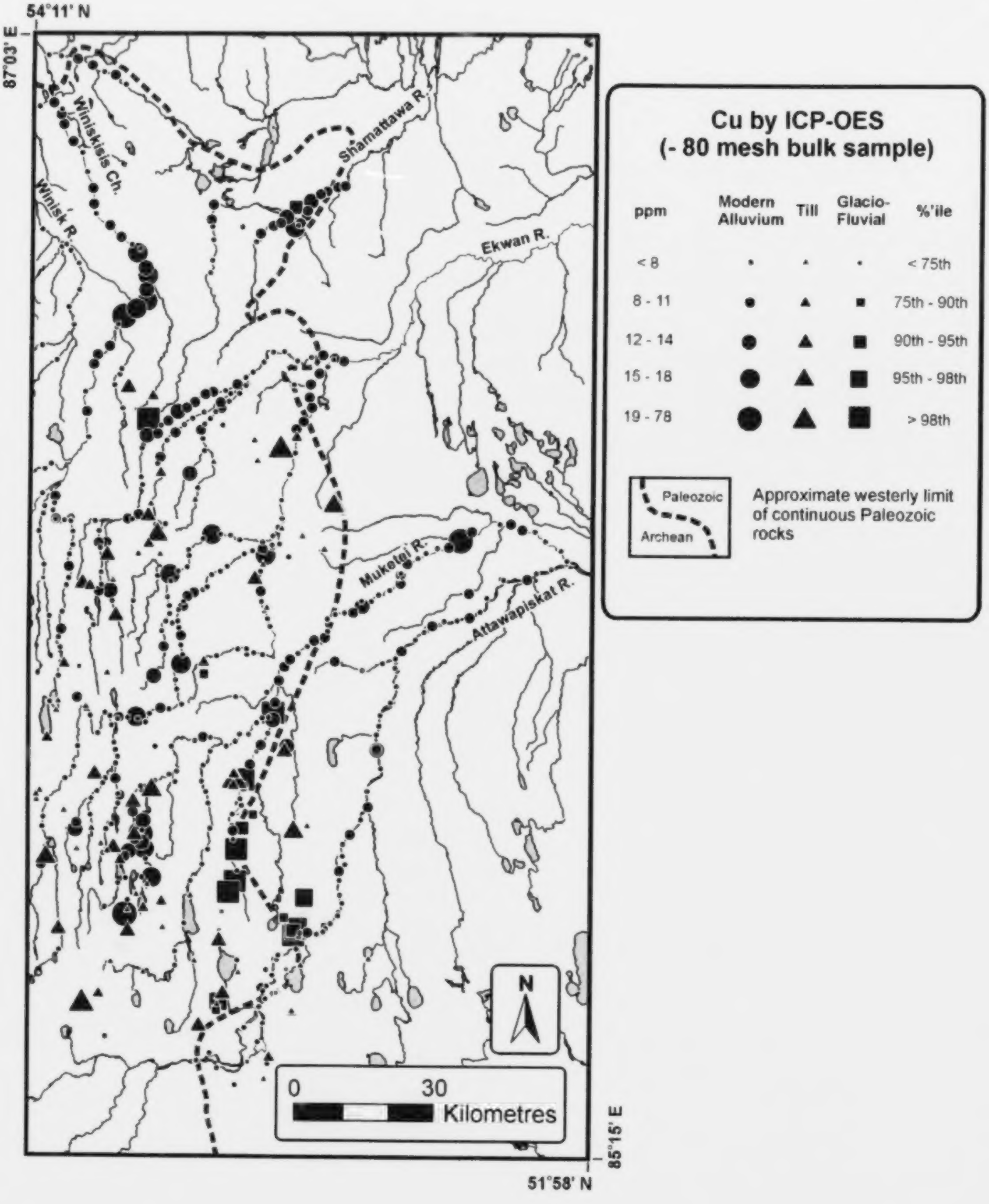

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Fe by INAA
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 12.2
< 75th
12.2 - 15.29
75th - 90th
15.3 - 16.79
90th - 95th
16.8 - 18.76
95th - 98th
18.77 - 25.1
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

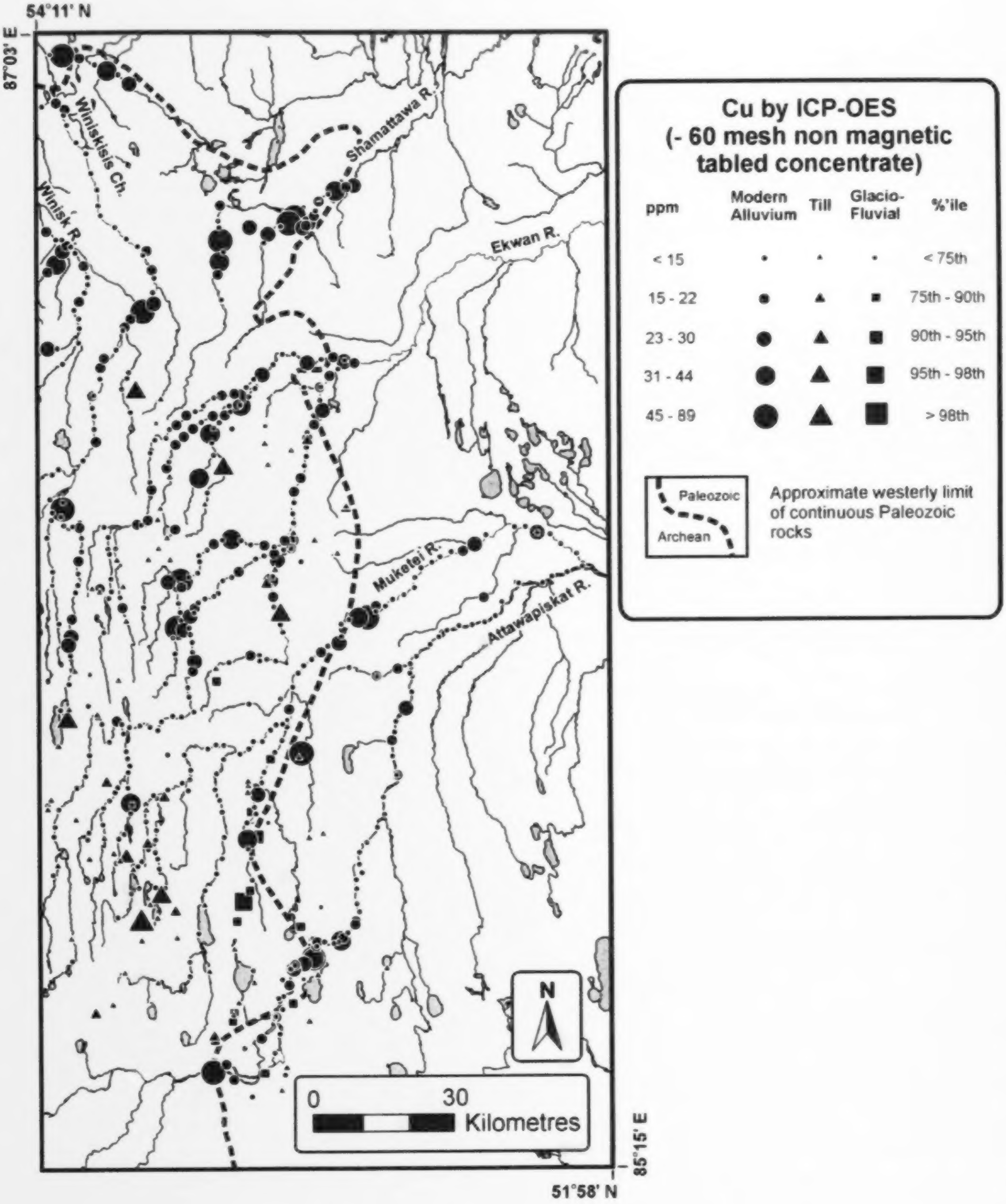

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
0
30
Kilometres
N
85°15' E
51°58' N
Co by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 9
< 75th
9 - 10
75th - 90th
11 - 12
90th - 95th
13 - 15
95th - 98th
16 - 30
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

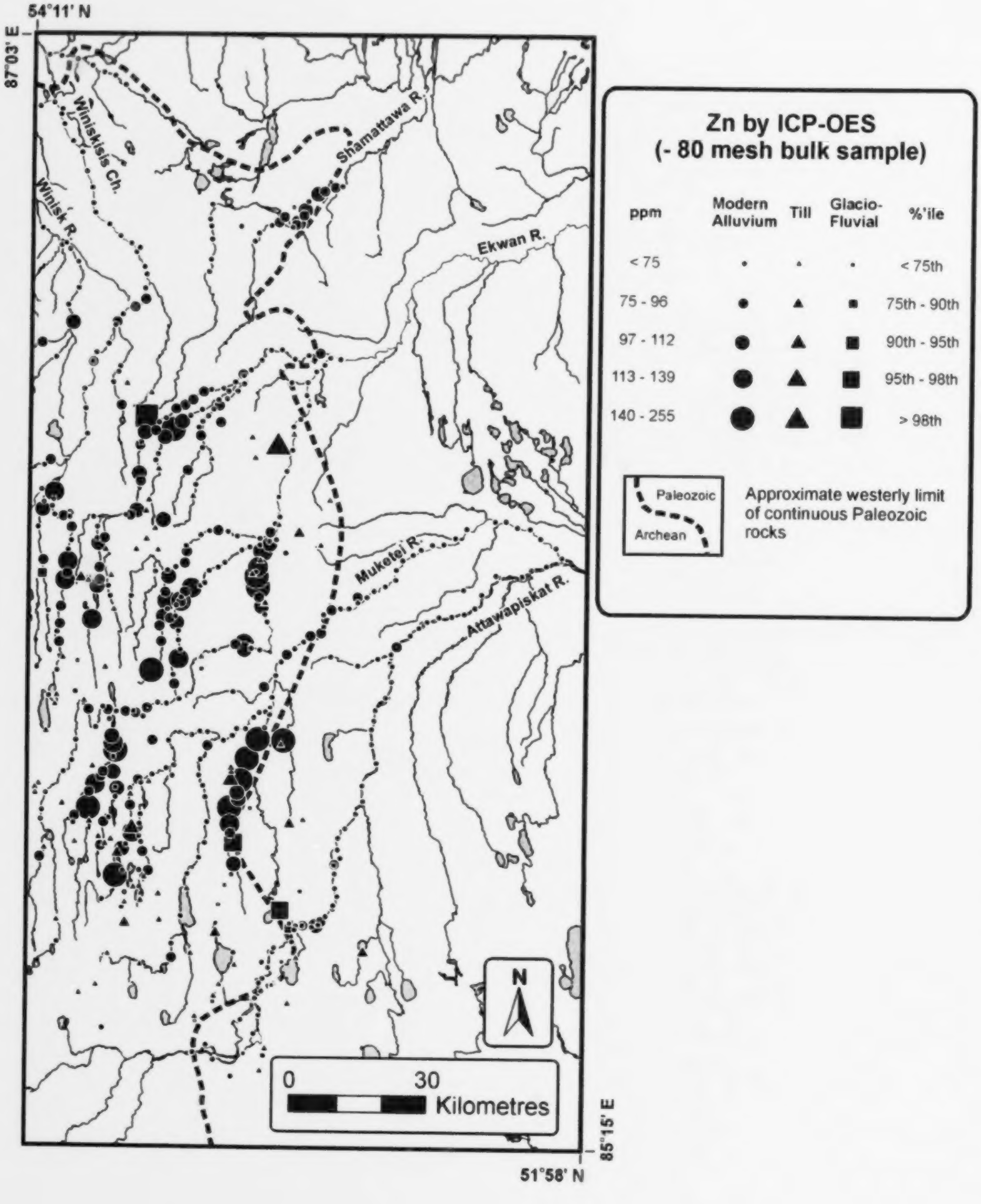

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Co by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 22
< 75th
22 - 24
75th - 90th
25 - 27
90th - 95th
28 - 30
95th - 98th
31 - 160
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

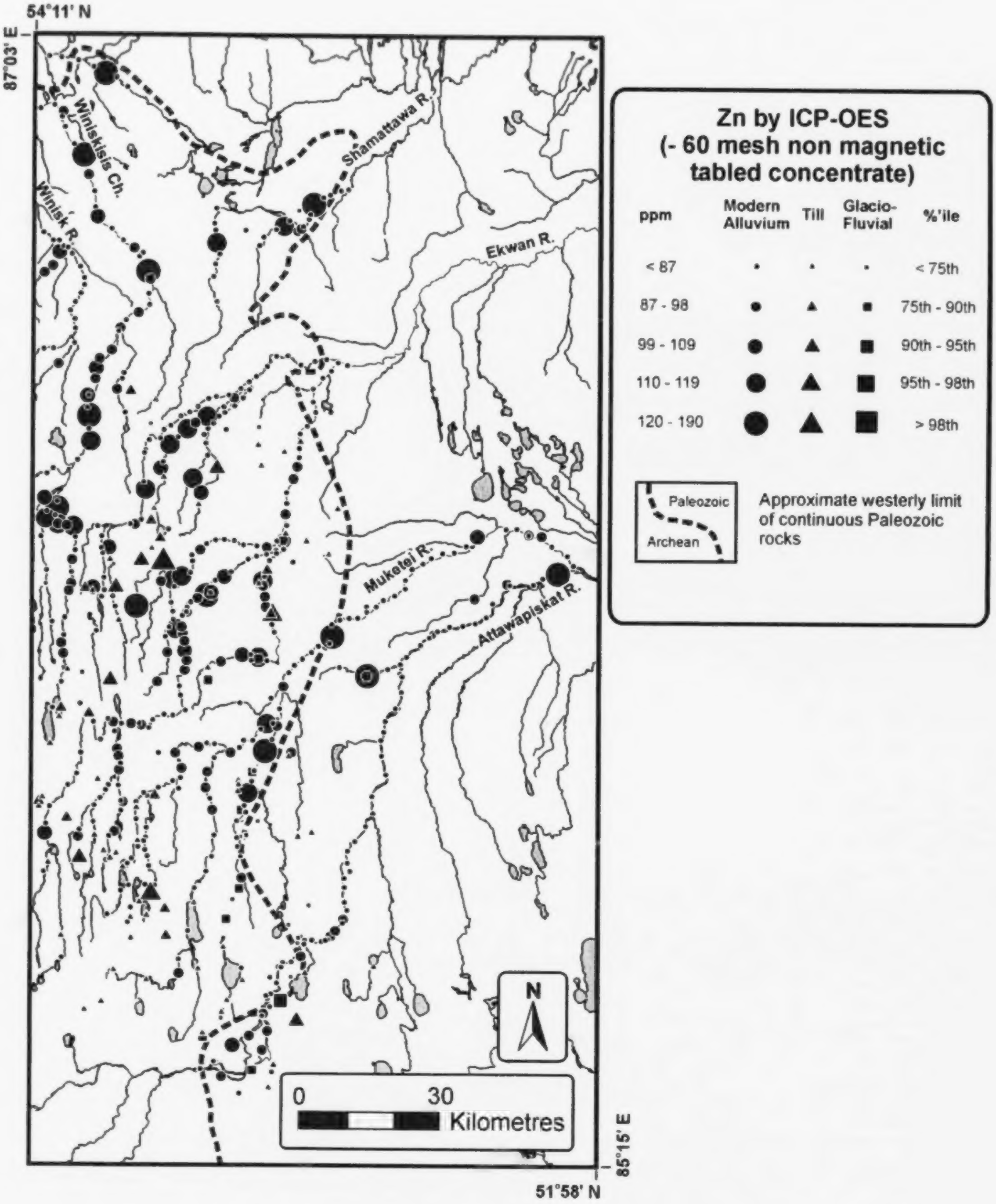

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Ni by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 18
< 75th
18 - 22
75th - 90th
23 - 28
90th - 95th
29 - 36
95th - 98th
37 - 55
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

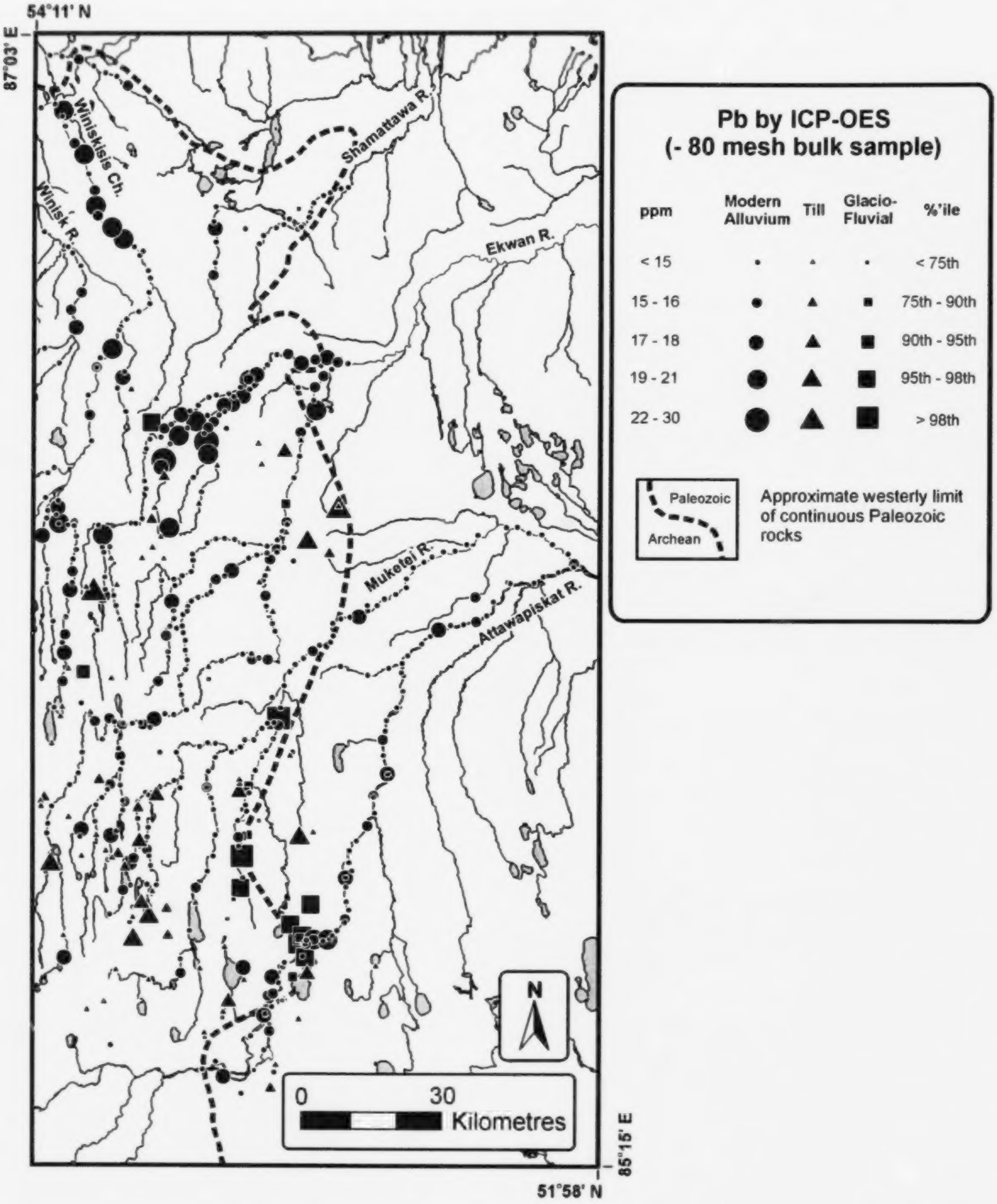

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Ni by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 31
< 75th
31 - 35
75th - 90th
36 - 37
90th - 95th
38 - 43
95th - 98th
44 - 74
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres
85°15' E
51°58' N

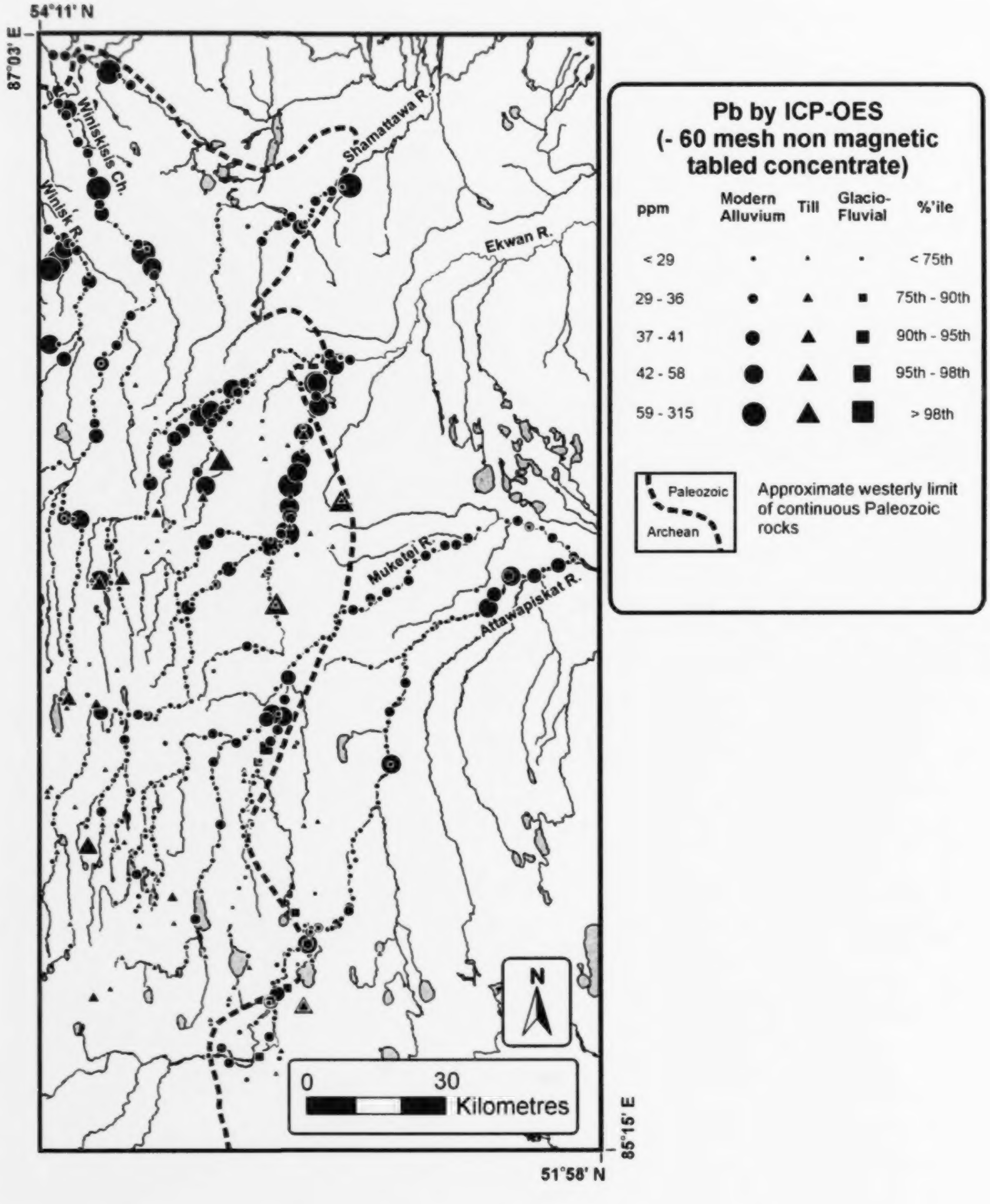

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Cu by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 8
< 75th
8 - 11
75th - 90th
12 - 14
90th - 95th
15 - 18
95th - 98th
19 - 78
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

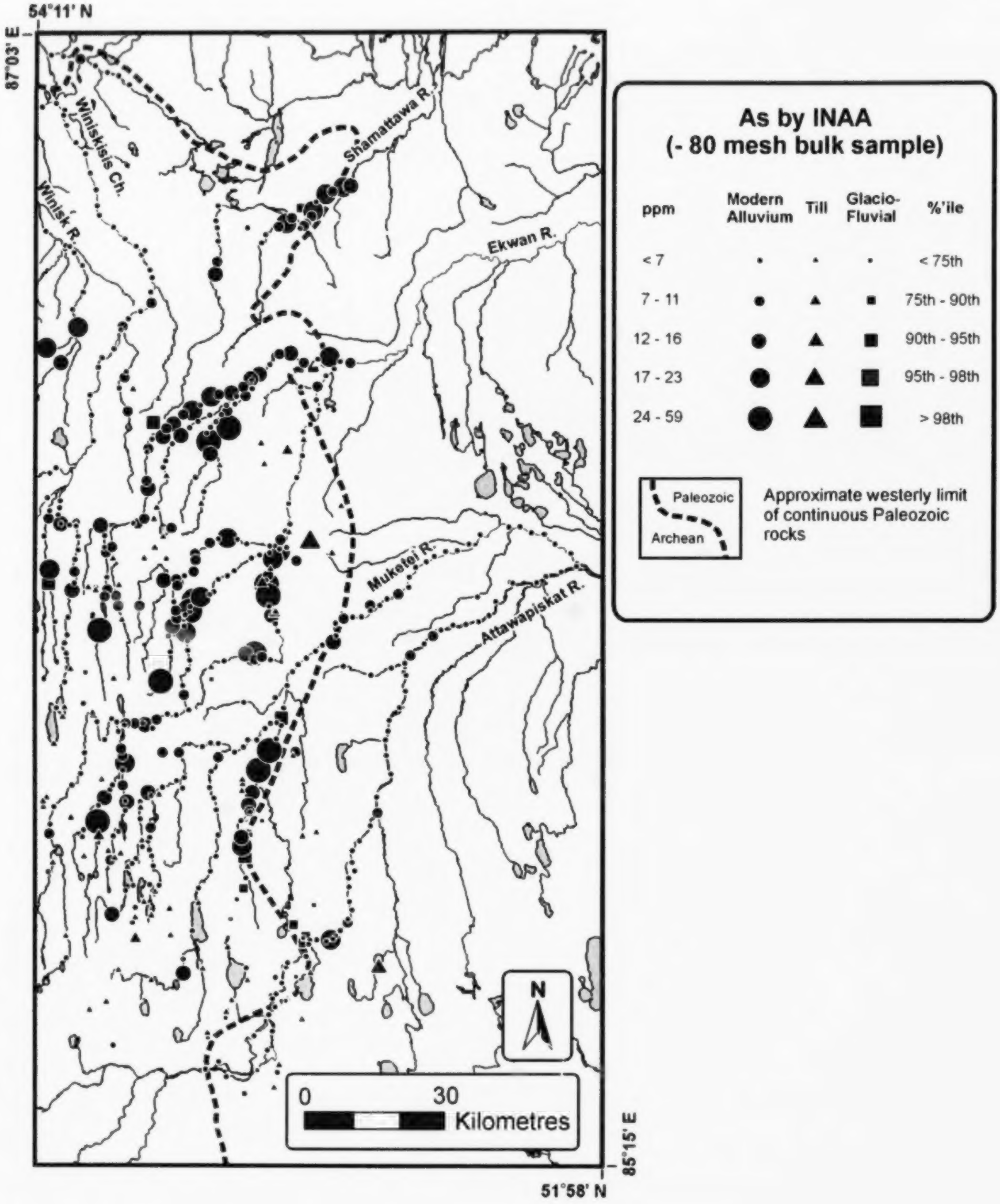

54°11' N
87°03' E
Cu by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 15
< 75th
15 - 22
75th - 90th
23 - 30
90th - 95th
31 - 44
95th - 98th
45 - 89
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N

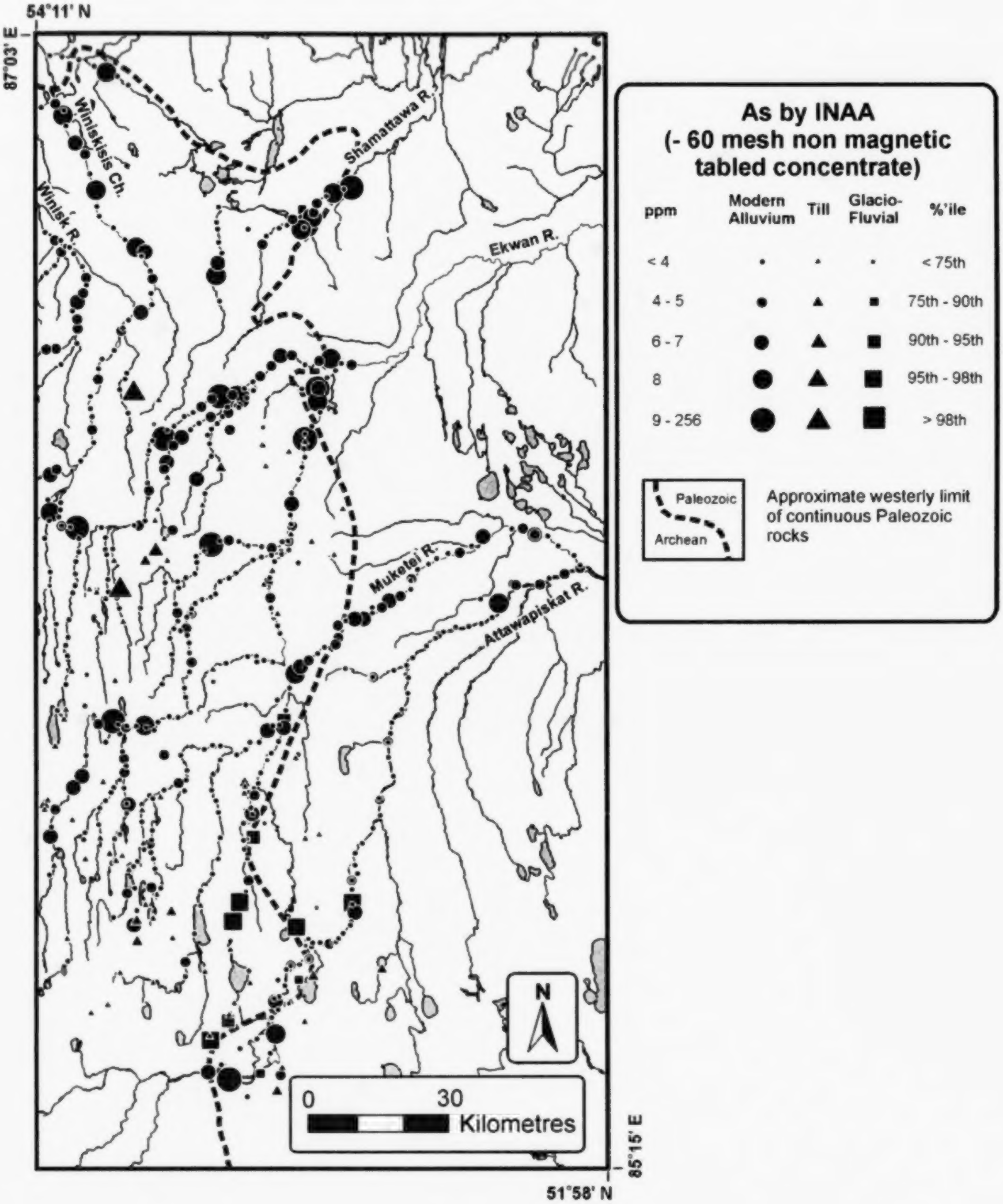

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Zn by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 75
< 75th
75 - 96
75th - 90th
97 - 112
90th - 95th
113 - 139
95th - 98th
140 - 255
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

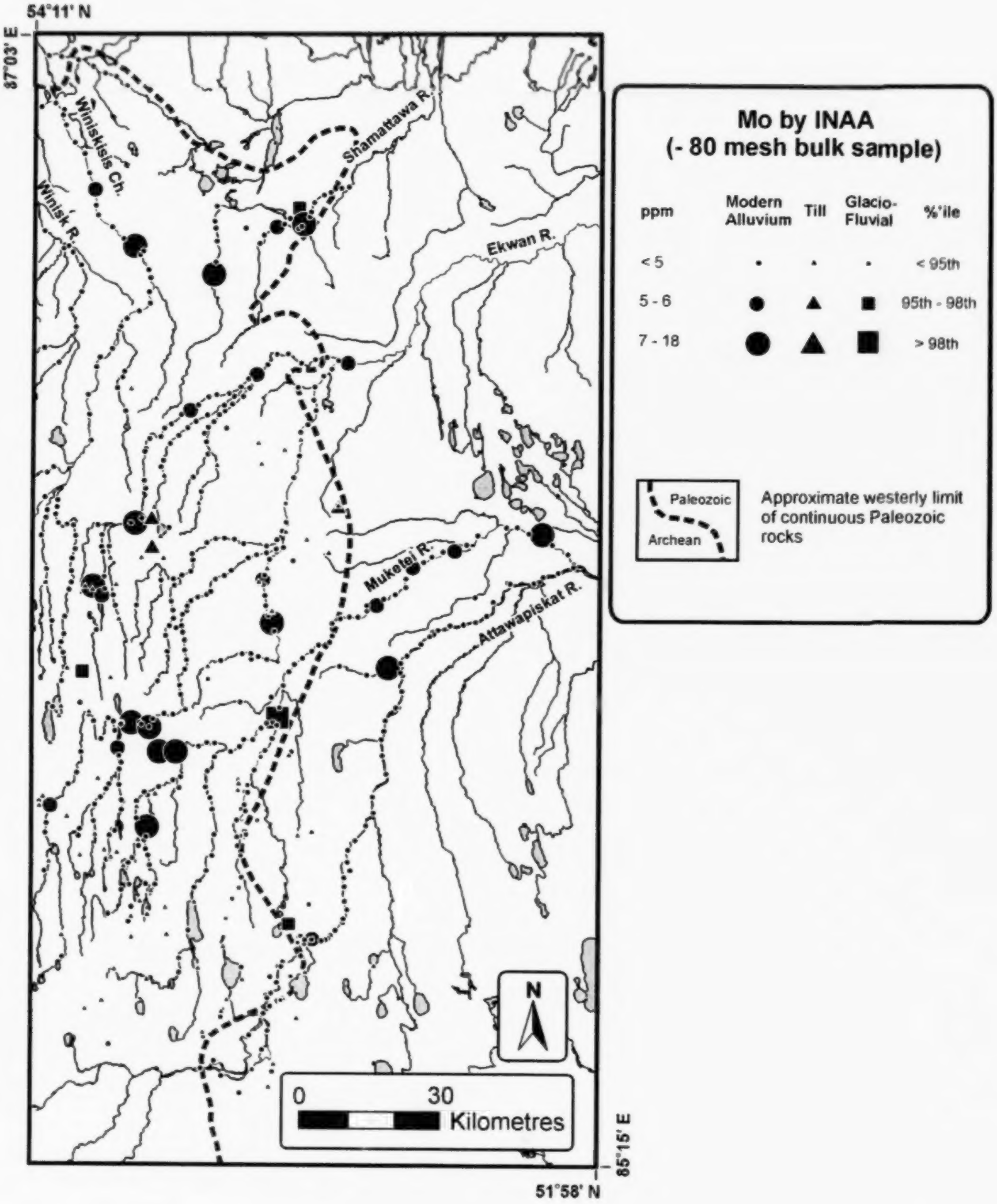

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Zn by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 87
< 75th
87 - 98
75th - 90th
99 - 109
90th - 95th
110 - 119
95th - 98th
120 - 190
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

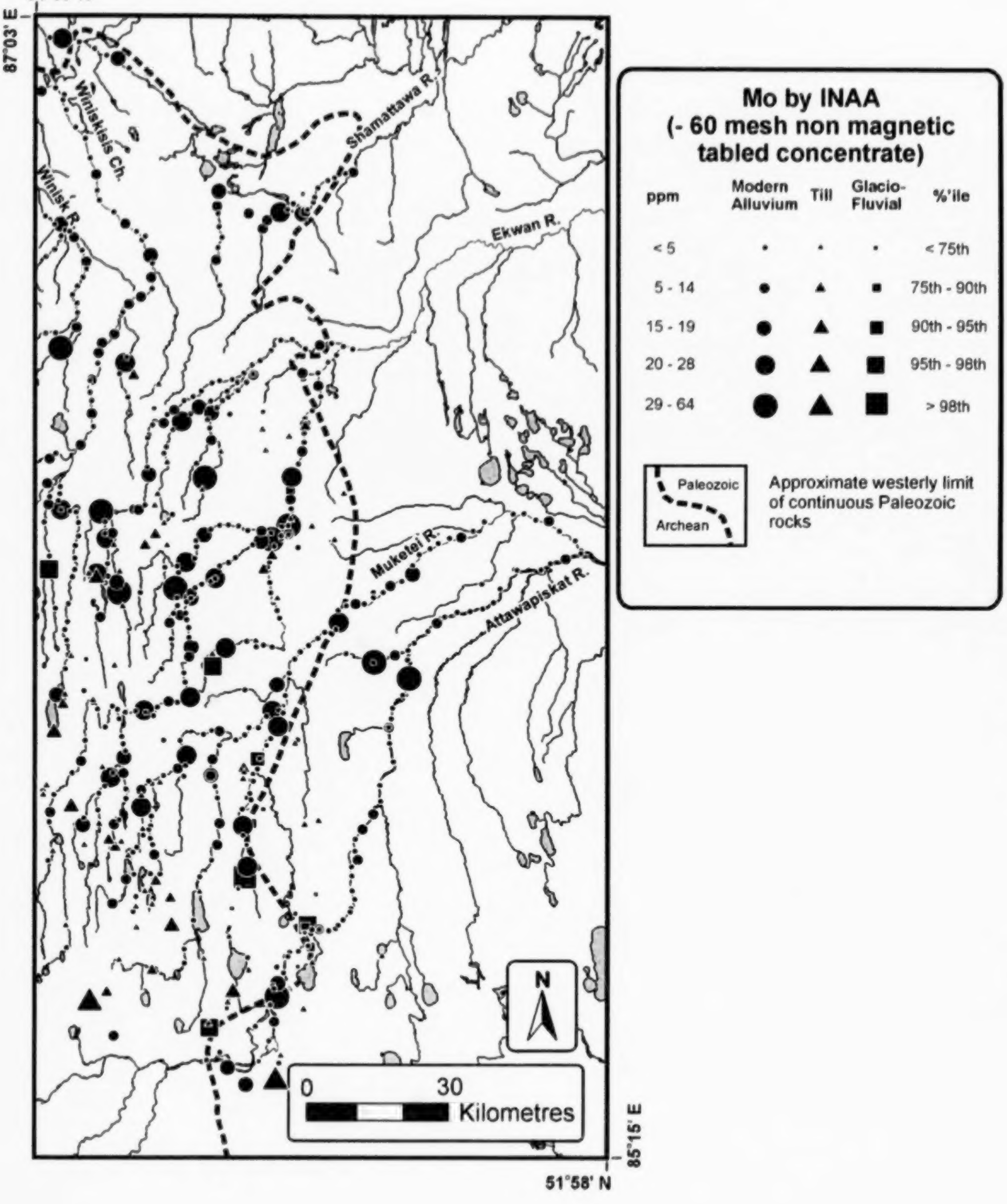

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Pb by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 15
< 75th
15 - 16
75th - 90th
17 - 18
90th - 95th
19 - 21
95th - 98th
22 - 30
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

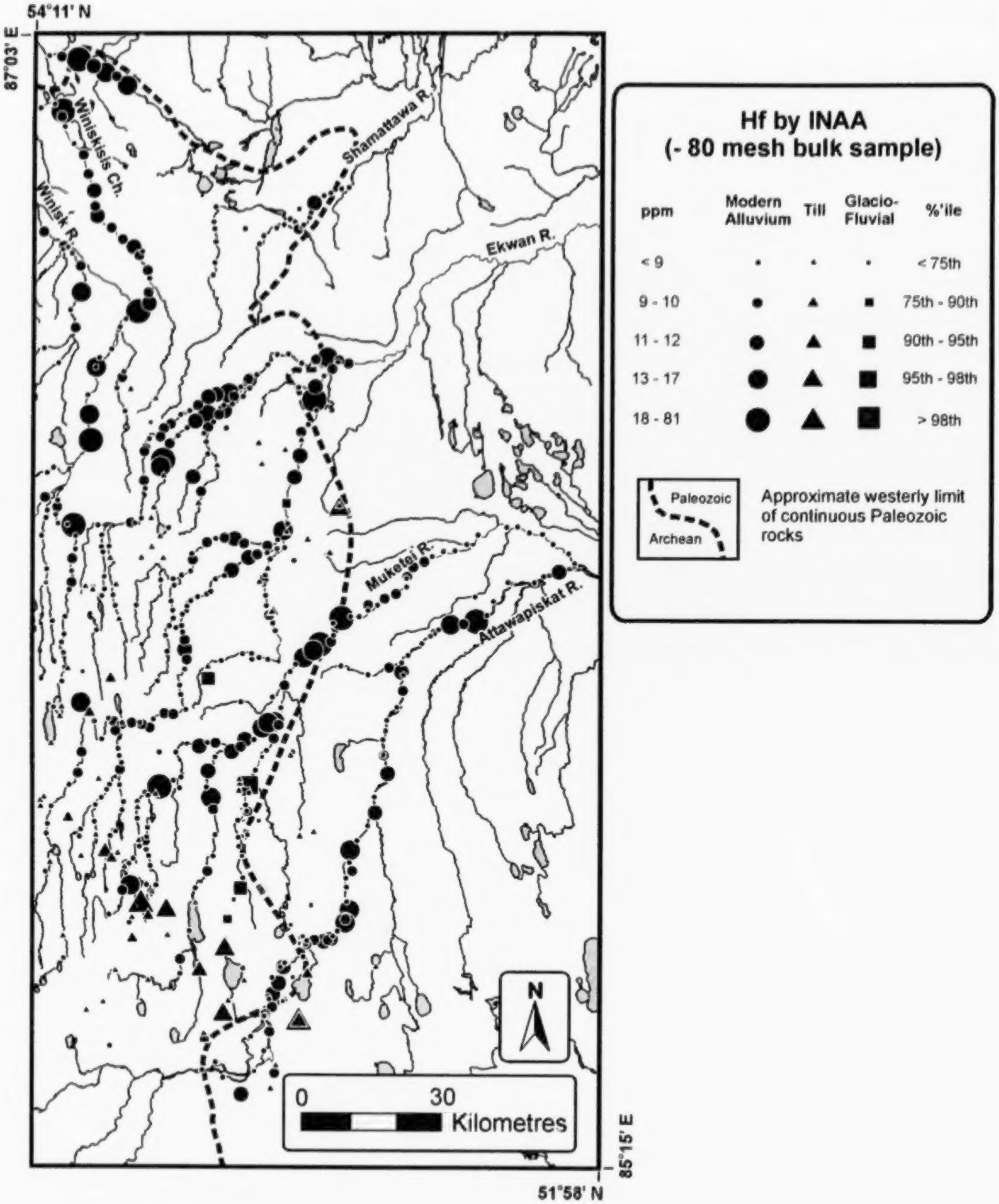

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Pb by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 29
< 75th
29 - 36
75th - 90th
37 - 41
90th - 95th
42 - 58
95th - 98th
59 - 315
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

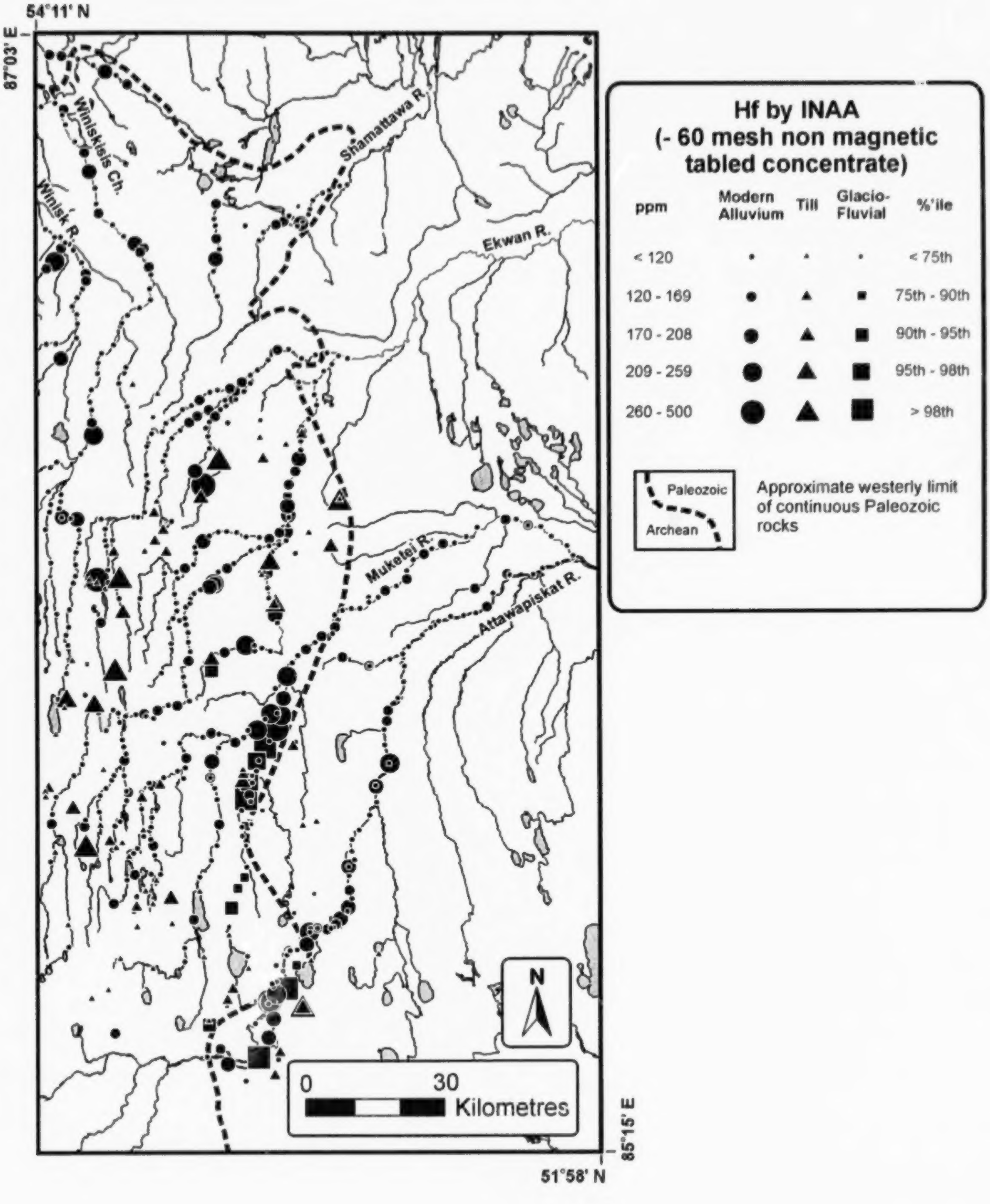

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
As by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 7
< 75th
7 - 11
75th - 90th
12 - 16
90th - 95th
17 - 23
95th - 98th
24 - 59
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

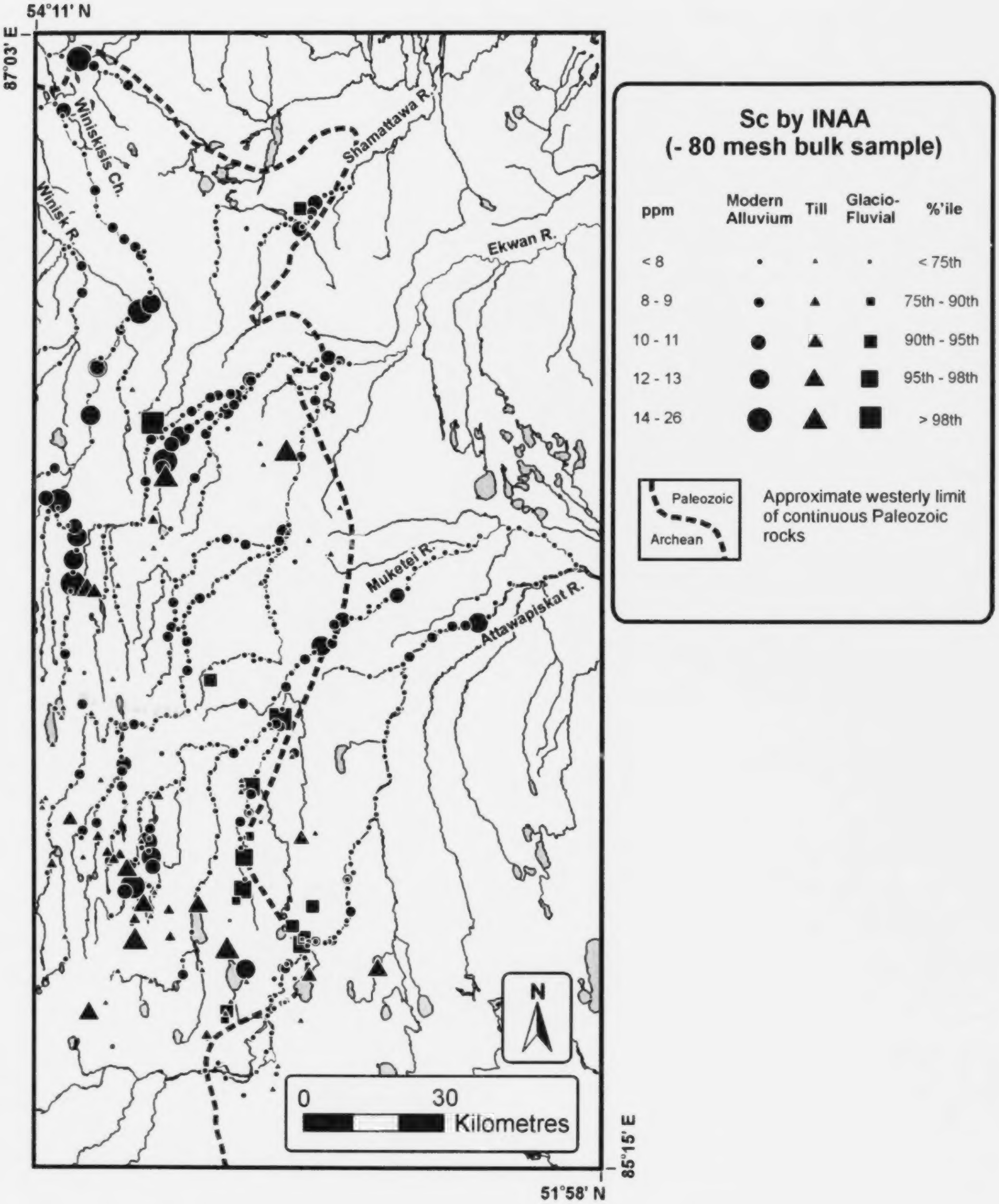

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
As by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 4
< 75th
4 - 5
75th - 90th
6 - 7
90th - 95th
8
95th - 98th
9 - 256
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres

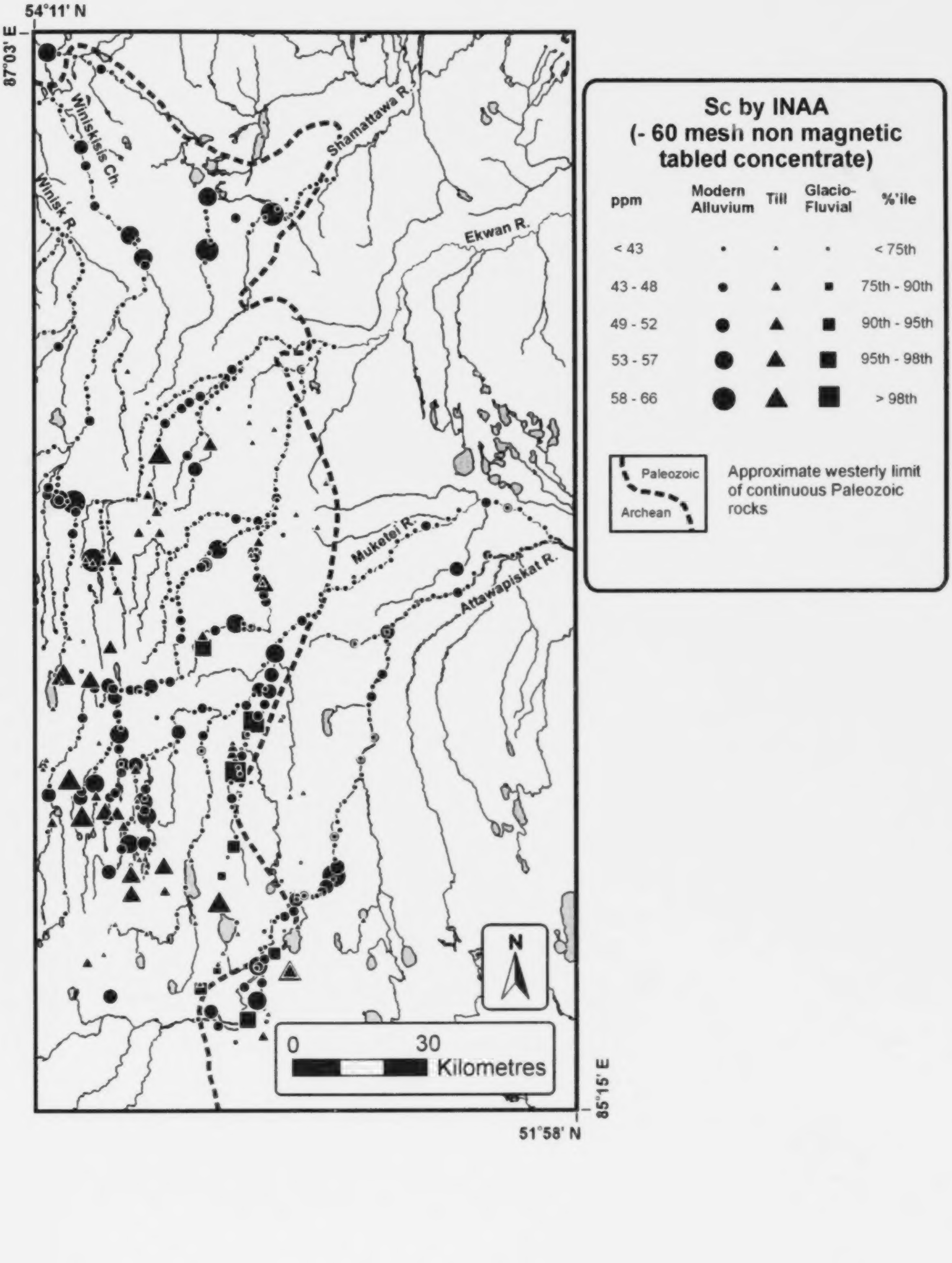

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Mukatei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Mo by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 5
< 95th
5 - 6
95th - 98th
7 - 18
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

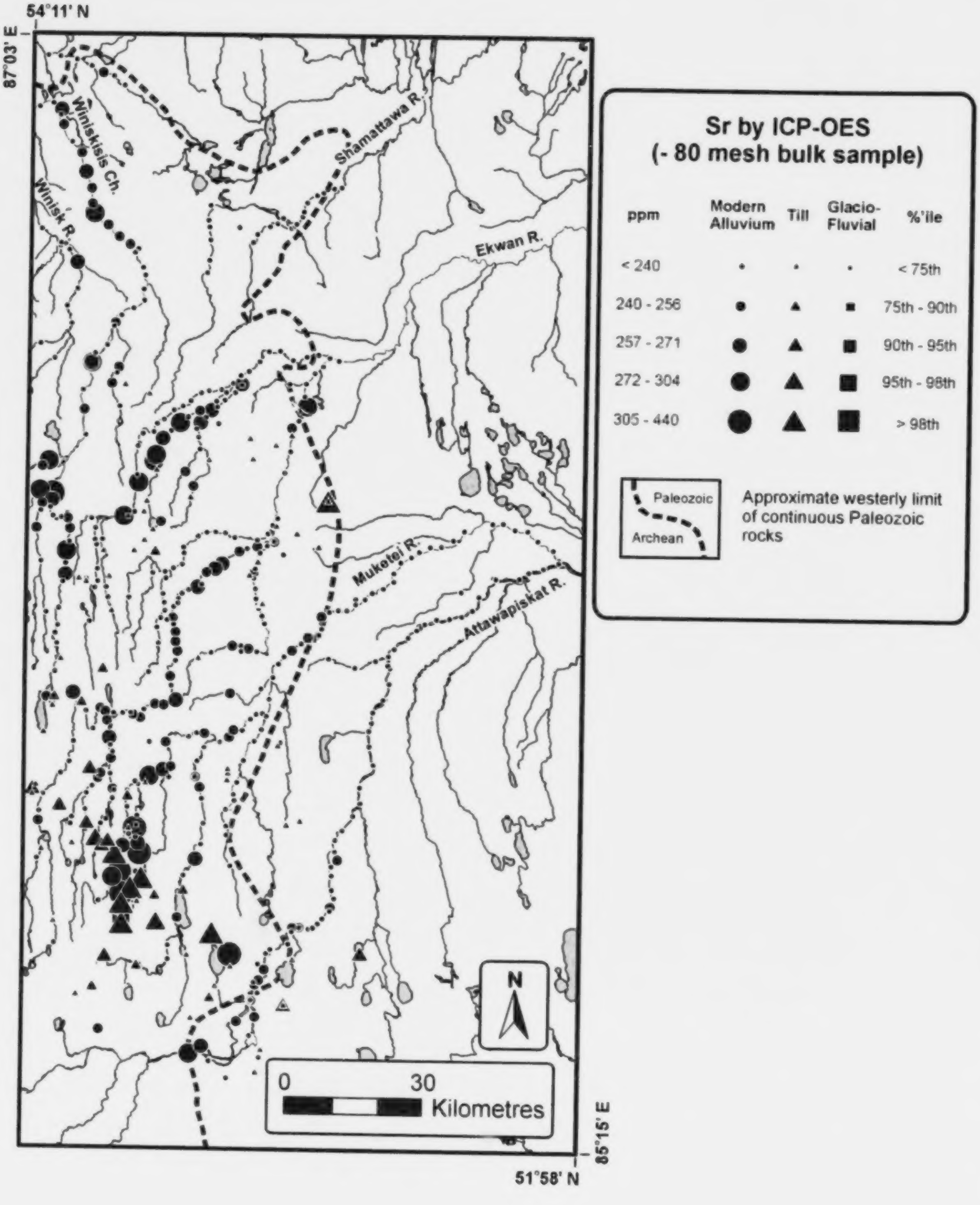

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Mo by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 5
< 75th
5 - 14
75th - 90th
15 - 19
90th - 95th
20 - 28
95th - 98th
29 - 64
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

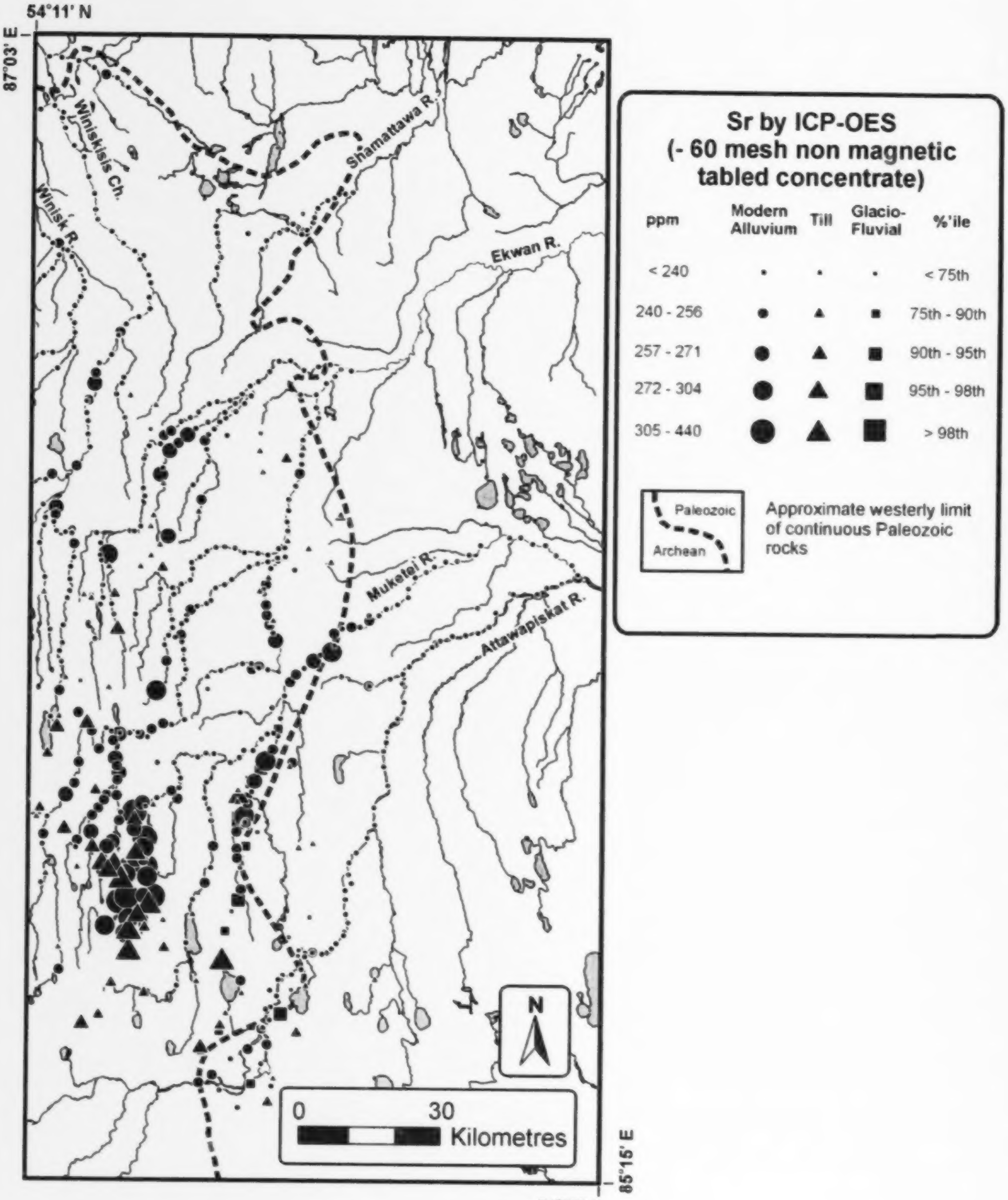

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Hf by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 9
< 75th
9 - 10
75th - 90th
11 - 12
90th - 95th
13 - 17
95th - 98th
18 - 81
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

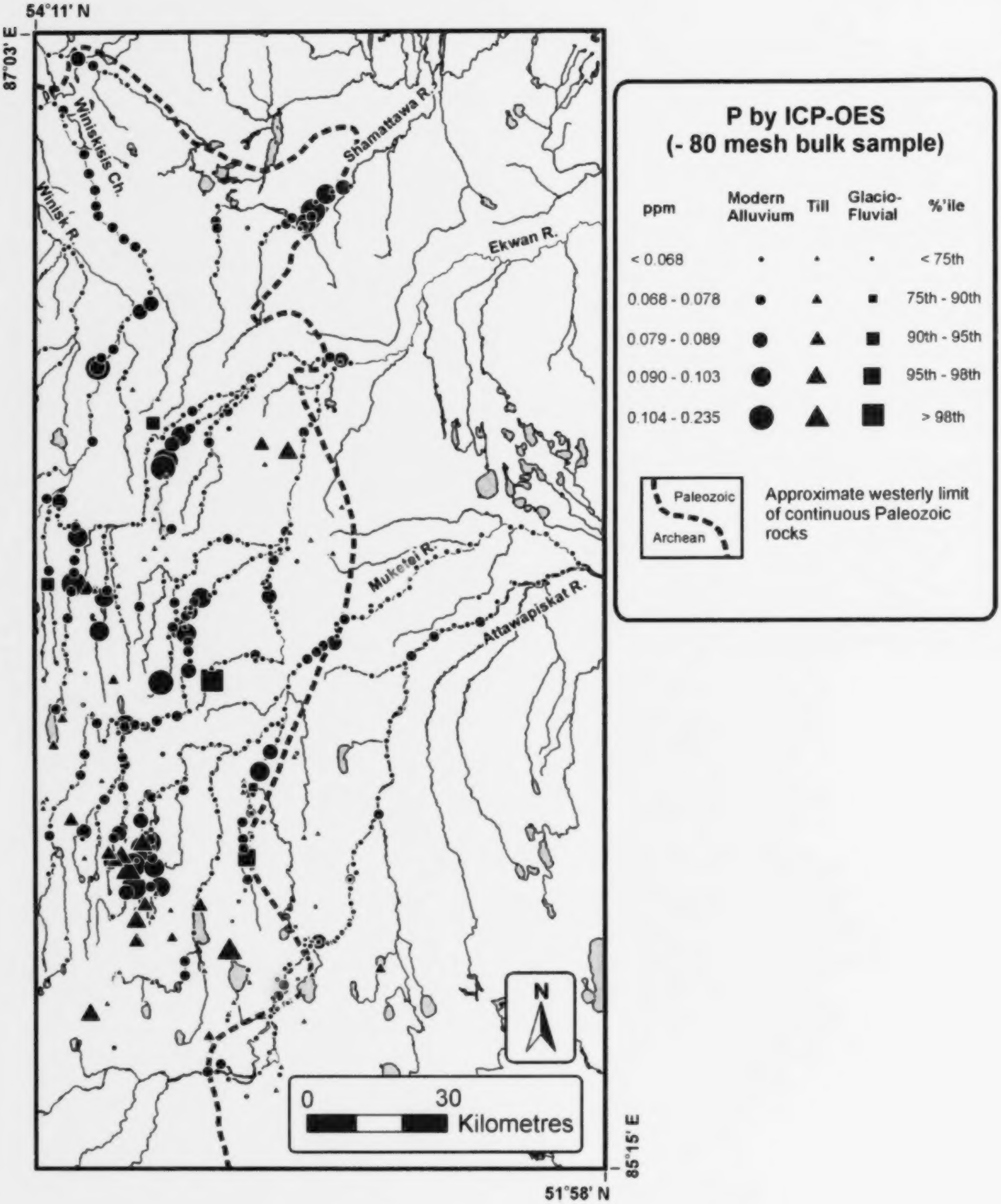

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Mukelei R.
Attawapiskat R.
N
0
30
Kilometres
Hf by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 120
< 75th
120 - 169
75th - 90th
170 - 208
90th - 95th
209 - 259
95th - 98th
260 - 500
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

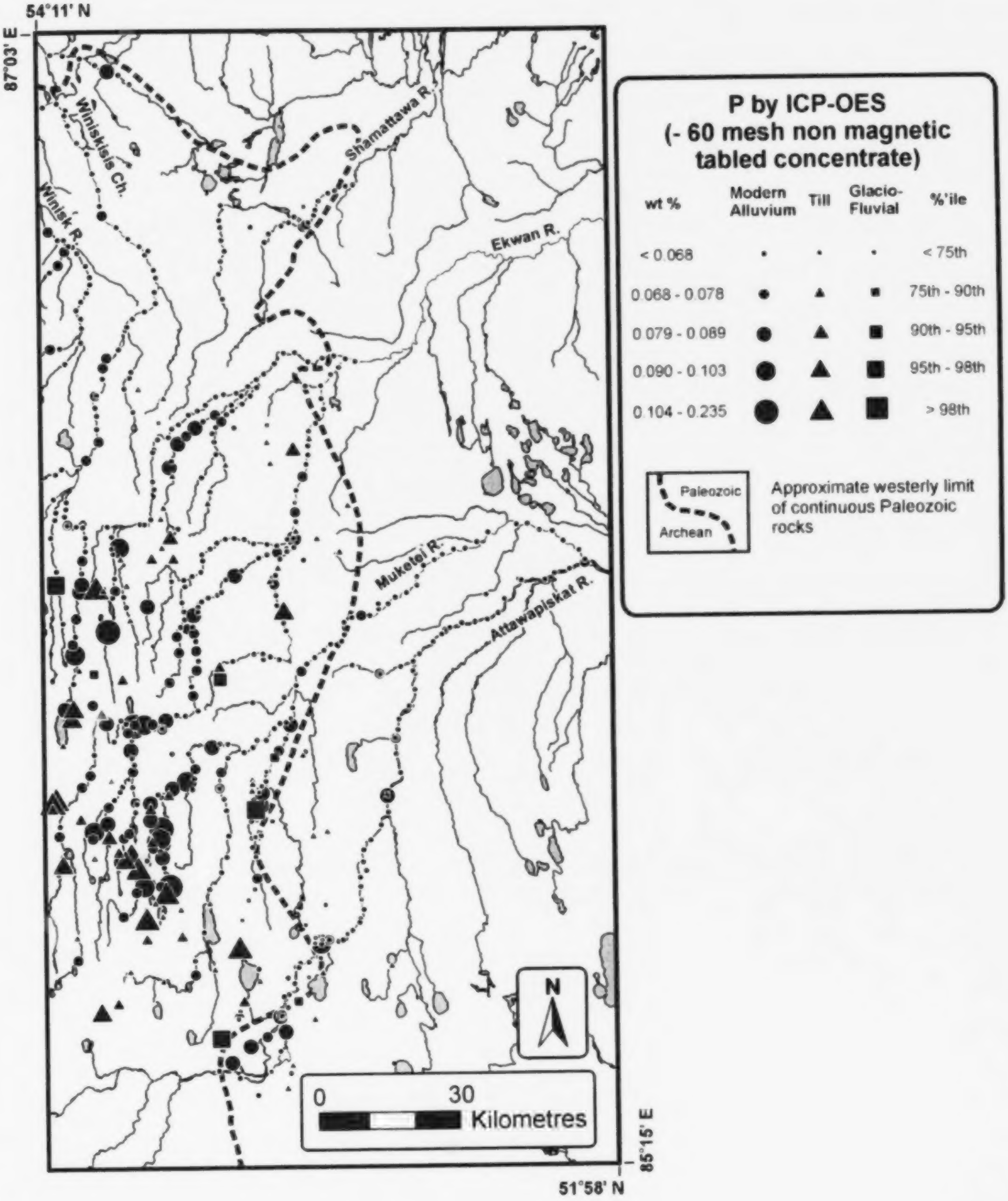

54°11' N
87°03' E
85°15' E
51°58' N
Sc by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 8
< 75th
8 - 9
75th - 90th
10 - 11
90th - 95th
12 - 13
95th - 98th
14 - 26
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres

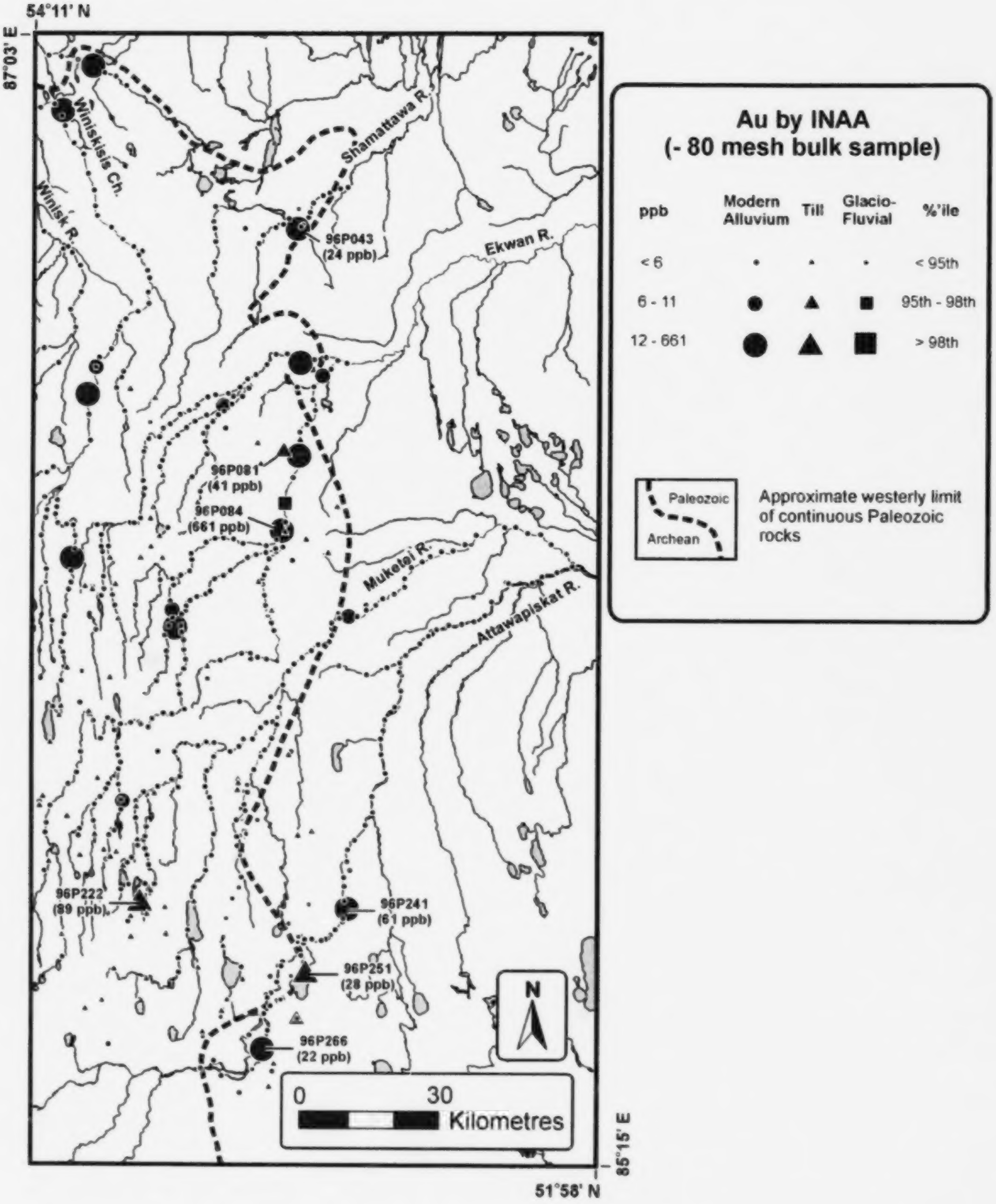

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Sc by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 43
< 75th
43 - 48
75th - 90th
49 - 52
90th - 95th
53 - 57
95th - 98th
58 - 66
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

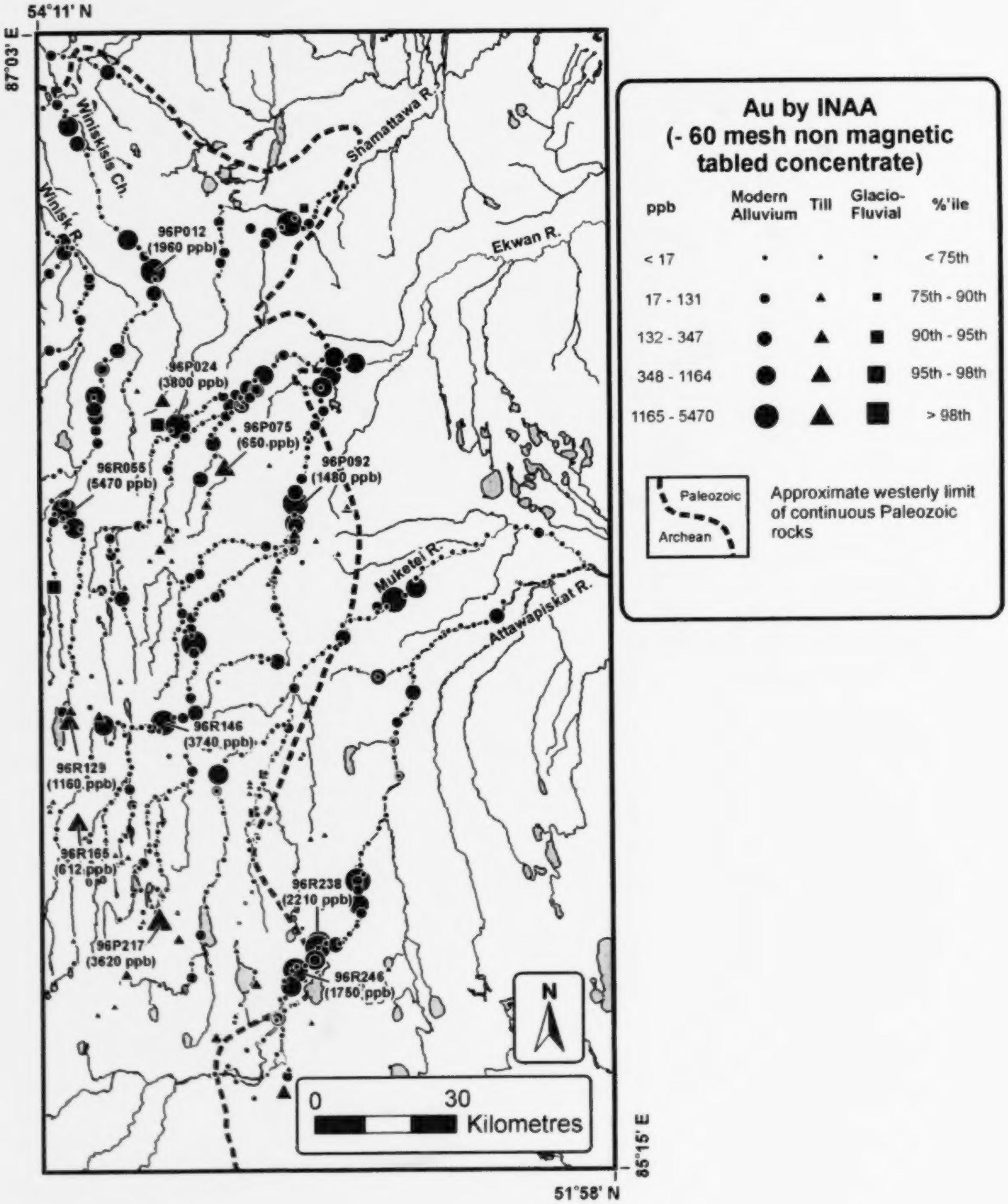

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Mukutei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Sr by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 240
< 75th
240 - 256
75th - 90th
257 - 271
90th - 95th
272 - 304
95th - 98th
305 - 440
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

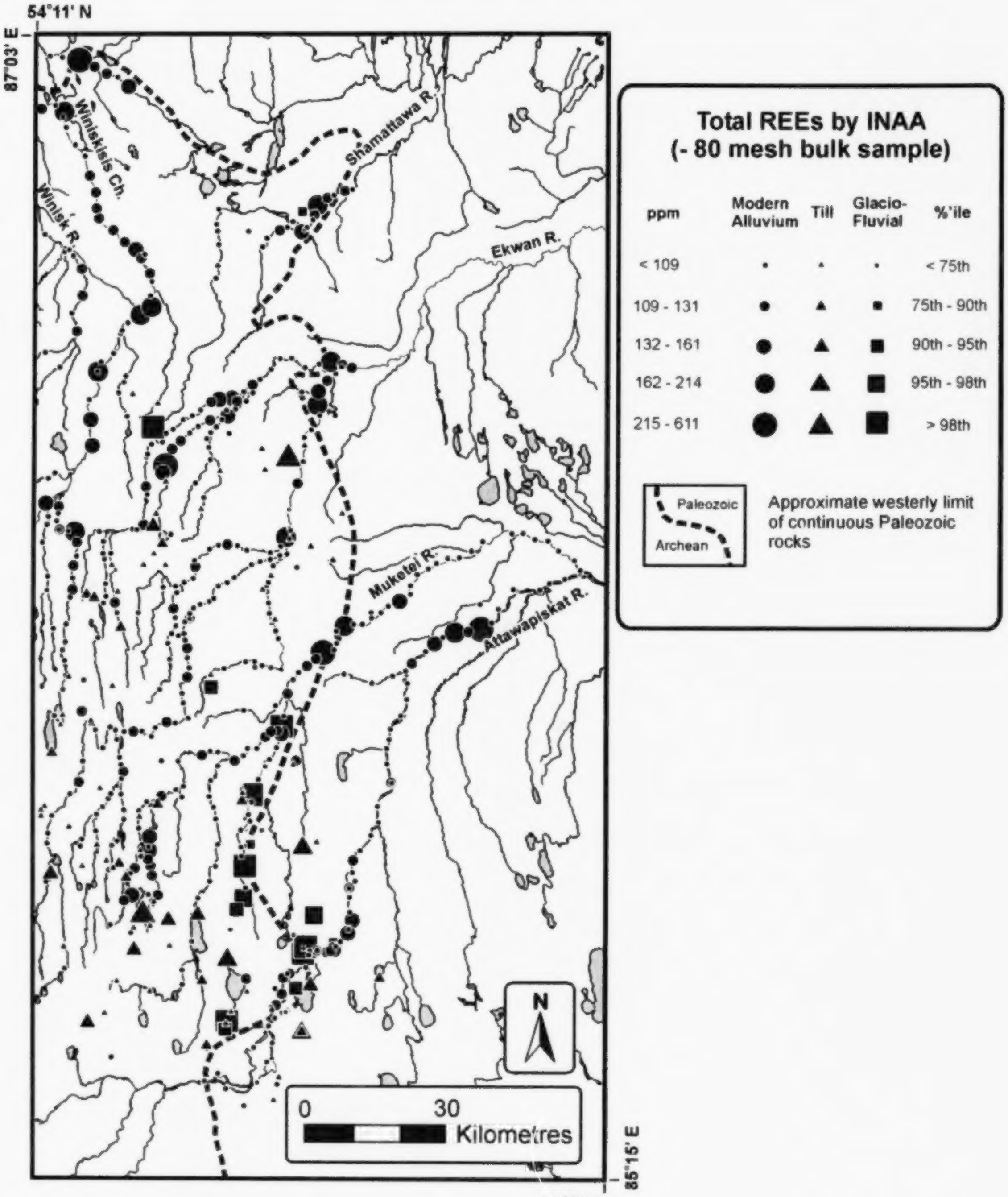

54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Sr by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 240
< 75th
240 - 256
75th - 90th
257 - 271
90th - 95th
272 - 304
95th - 98th
305 - 440
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

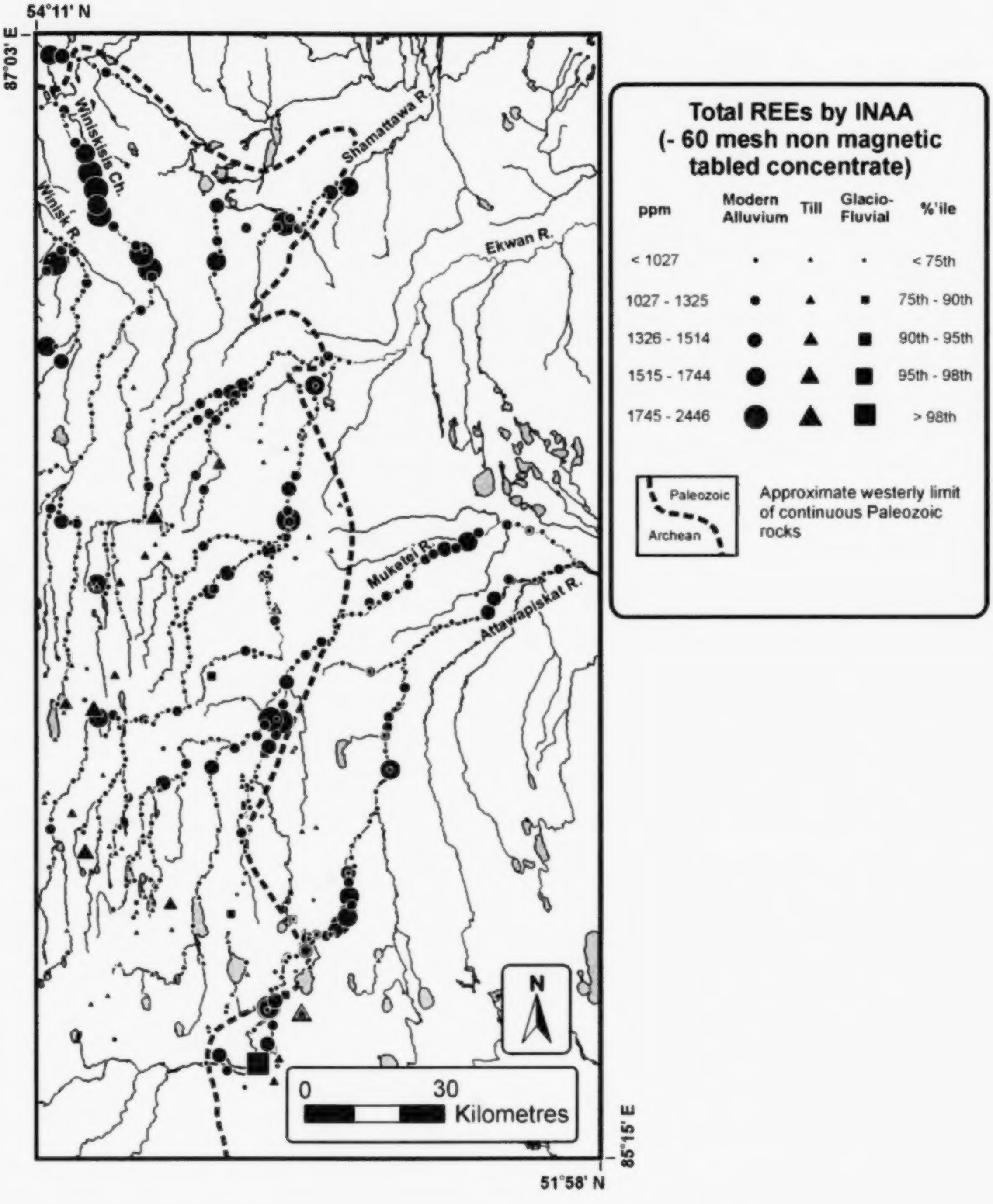

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
P by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 0.068
< 75th
0.068 - 0.078
75th - 90th
0.079 - 0.089
90th - 95th
0.090 - 0.103
95th - 98th
0.104 - 0.235
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

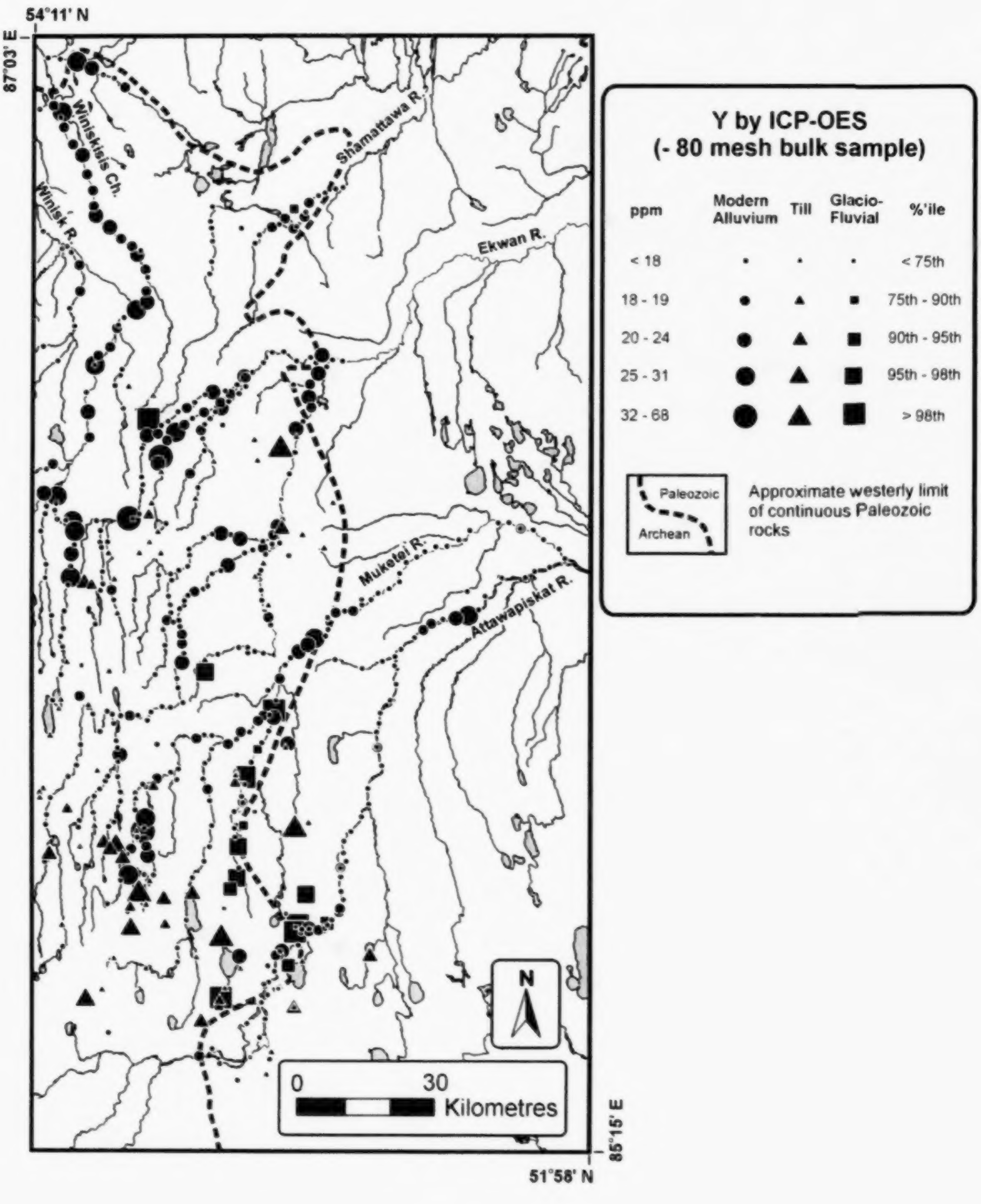

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
P by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
wt %
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 0.068
< 75th
0.068 - 0.078
75th - 90th
0.079 - 0.089
90th - 95th
0.090 - 0.103
95th - 98th
0.104 - 0.235
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

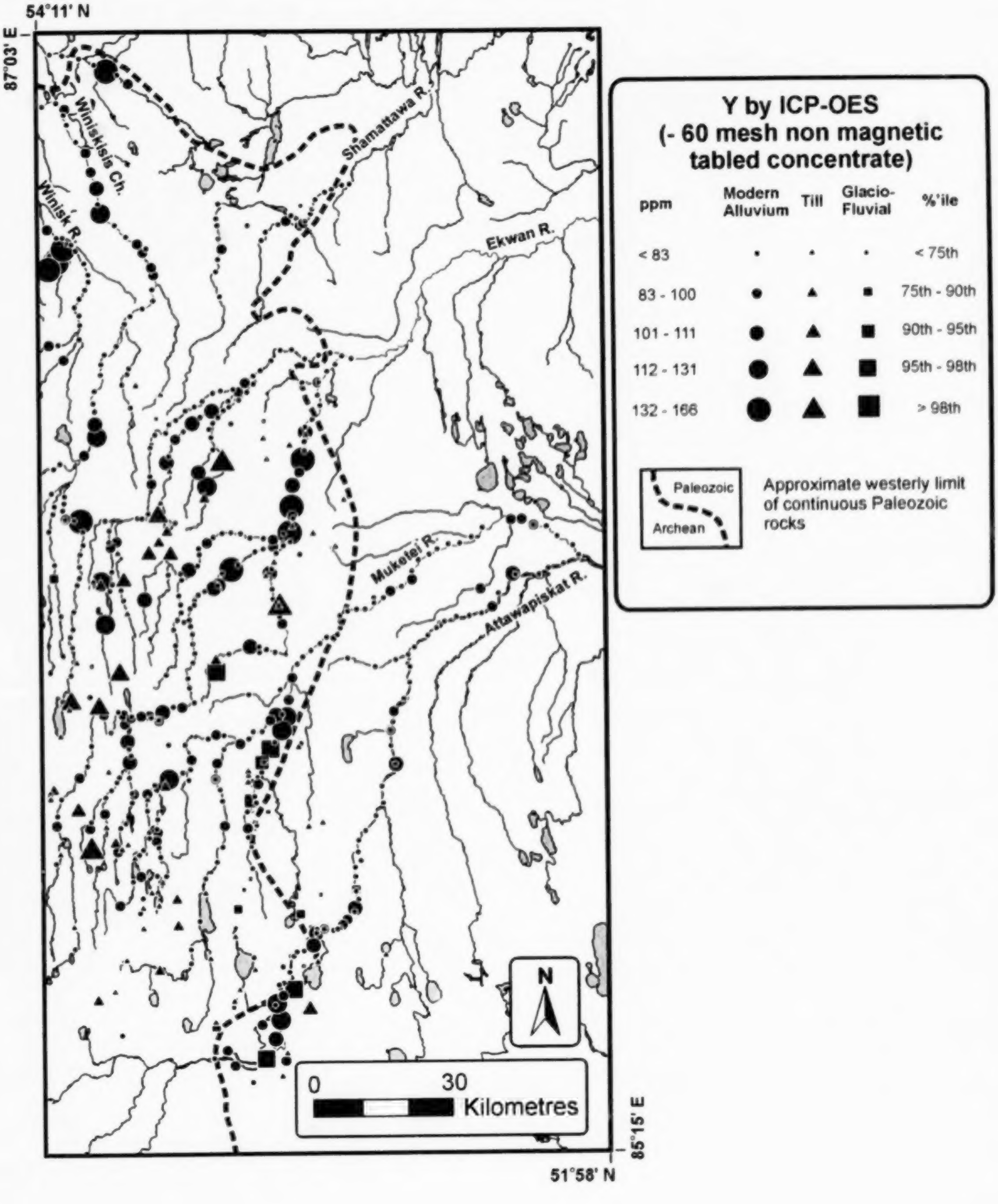

54°11' N
87°03' E
51°58' N
85°15' E
Au by INAA
(- 80 mesh bulk sample)
ppb
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 6
< 95th
6 - 11
95th - 98th
12 - 661
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
96P043 (24 ppb)
96P081 (41 ppb)
96P084 (661 ppb)
96P222 (89 ppb)
96P241 (61 ppb)
96P251 (28 ppb)
96P266 (22 ppb)
N
0
30
Kilometres

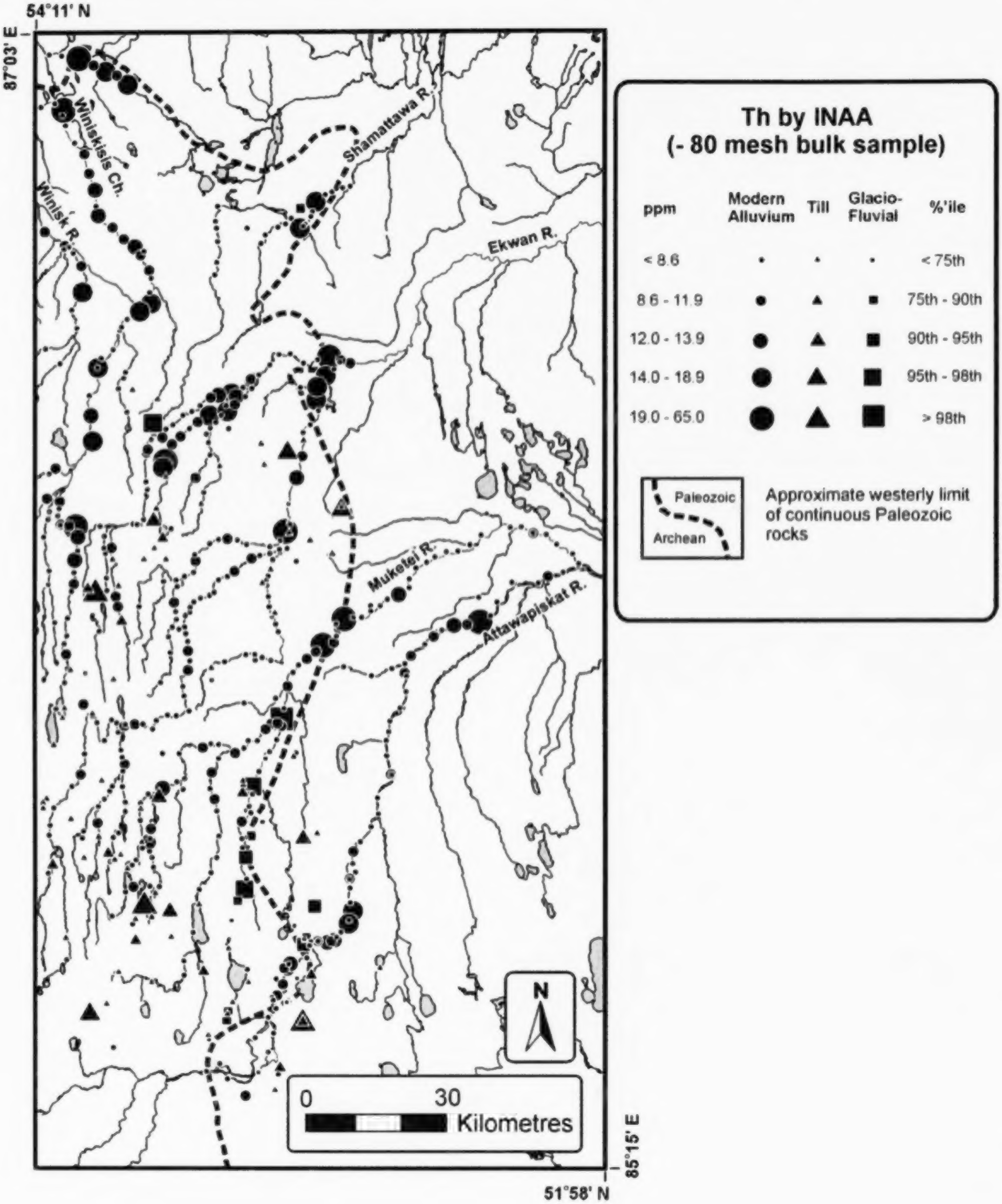

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
96P012 (1960 ppb)
96P024 (3800 ppb)
96P075 (650 ppb)
96P092 (1480 ppb)
96R055 (5470 ppb)
96R146 (3740 ppb)
96R129 (1160 ppb)
96R165 (612 ppb)
96P217 (3620 ppb)
96R238 (2210 ppb)
96R246 (1750 ppb)
N
0
30
Kilometres
Au by INAA (- 60 mesh non magnetic tabled concentrate)
ppb
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 17
< 75th
17 - 131
75th - 90th
132 - 347
90th - 95th
348 - 1164
95th - 98th
1165 - 5470
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

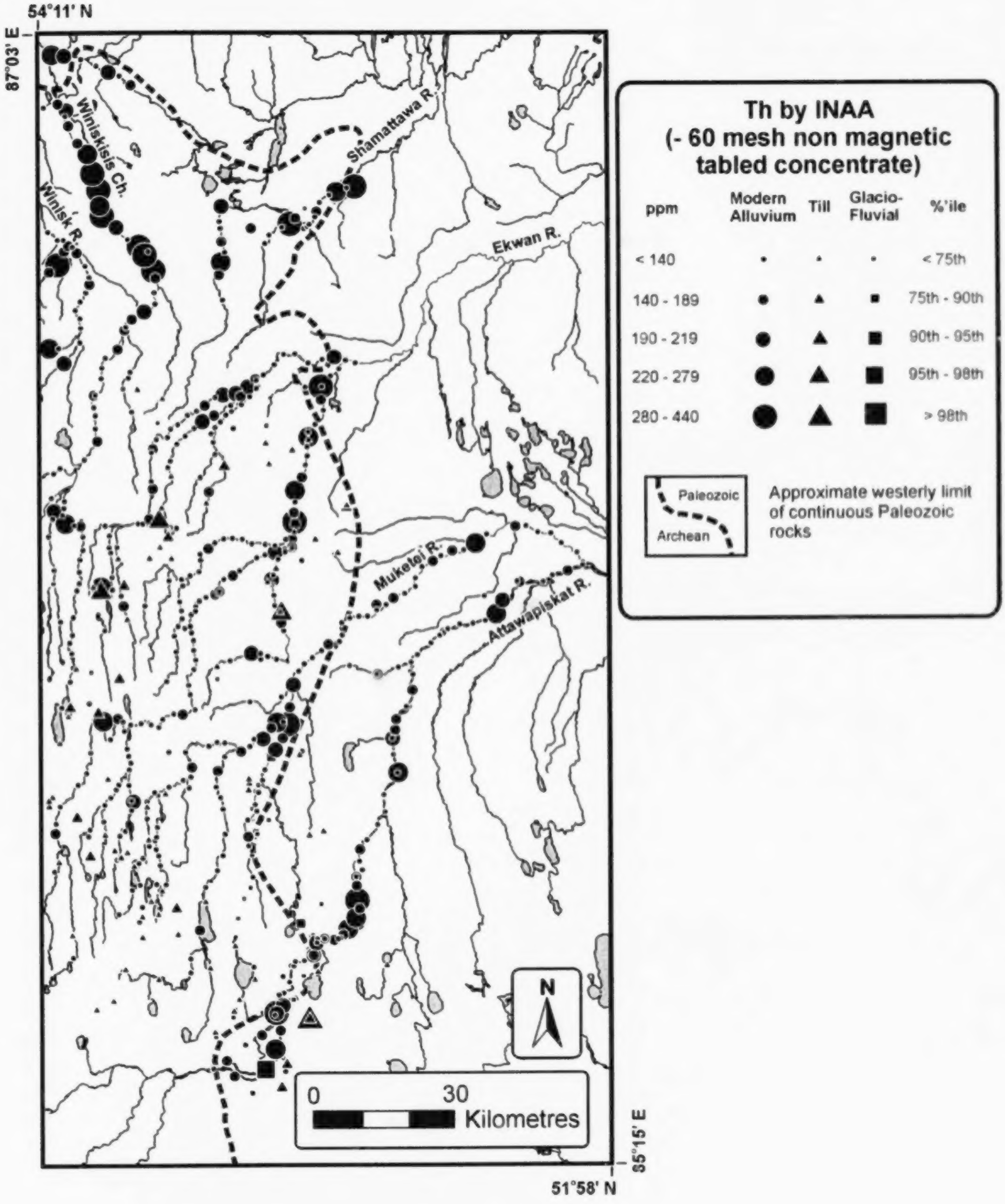

54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Total REEs by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 109
< 75th
109 - 131
75th - 90th
132 - 161
90th - 95th
162 - 214
95th - 98th
215 - 611
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

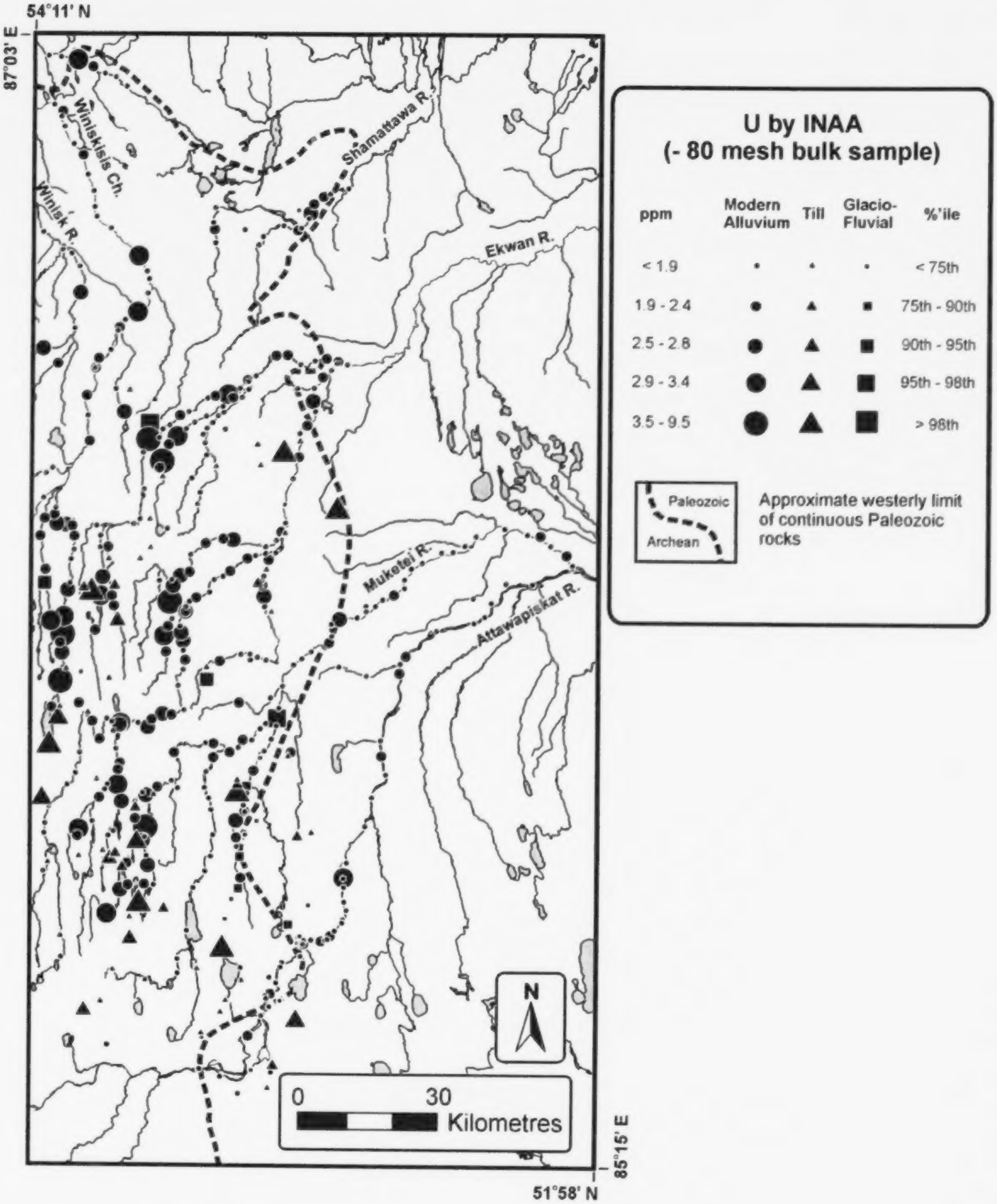

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Total REEs by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1027
< 75th
1027 - 1325
75th - 90th
1326 - 1514
90th - 95th
1515 - 1744
95th - 98th
1745 - 2446
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres

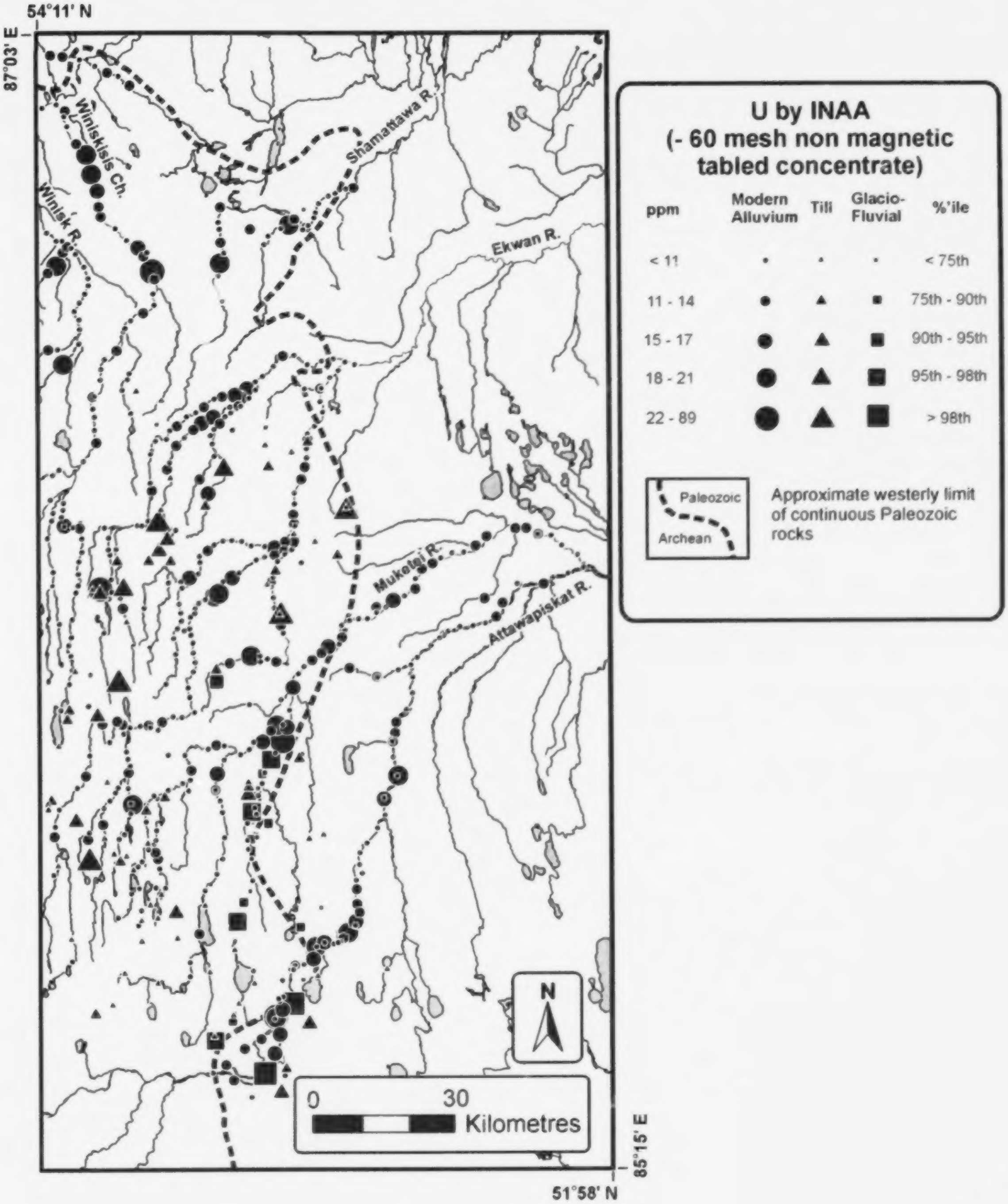

54°11' N
87°03' E
85°15' E
51°58' N
Winisk R.
Winiskisis Ch.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Y by ICP-OES
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 18
< 75th
18 - 19
75th - 90th
20 - 24
90th - 95th
25 - 31
95th - 98th
32 - 68
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks


54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
Y by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 83
< 75th
83 - 100
75th - 90th
101 - 111
90th - 95th
112 - 131
95th - 98th
132 - 166
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

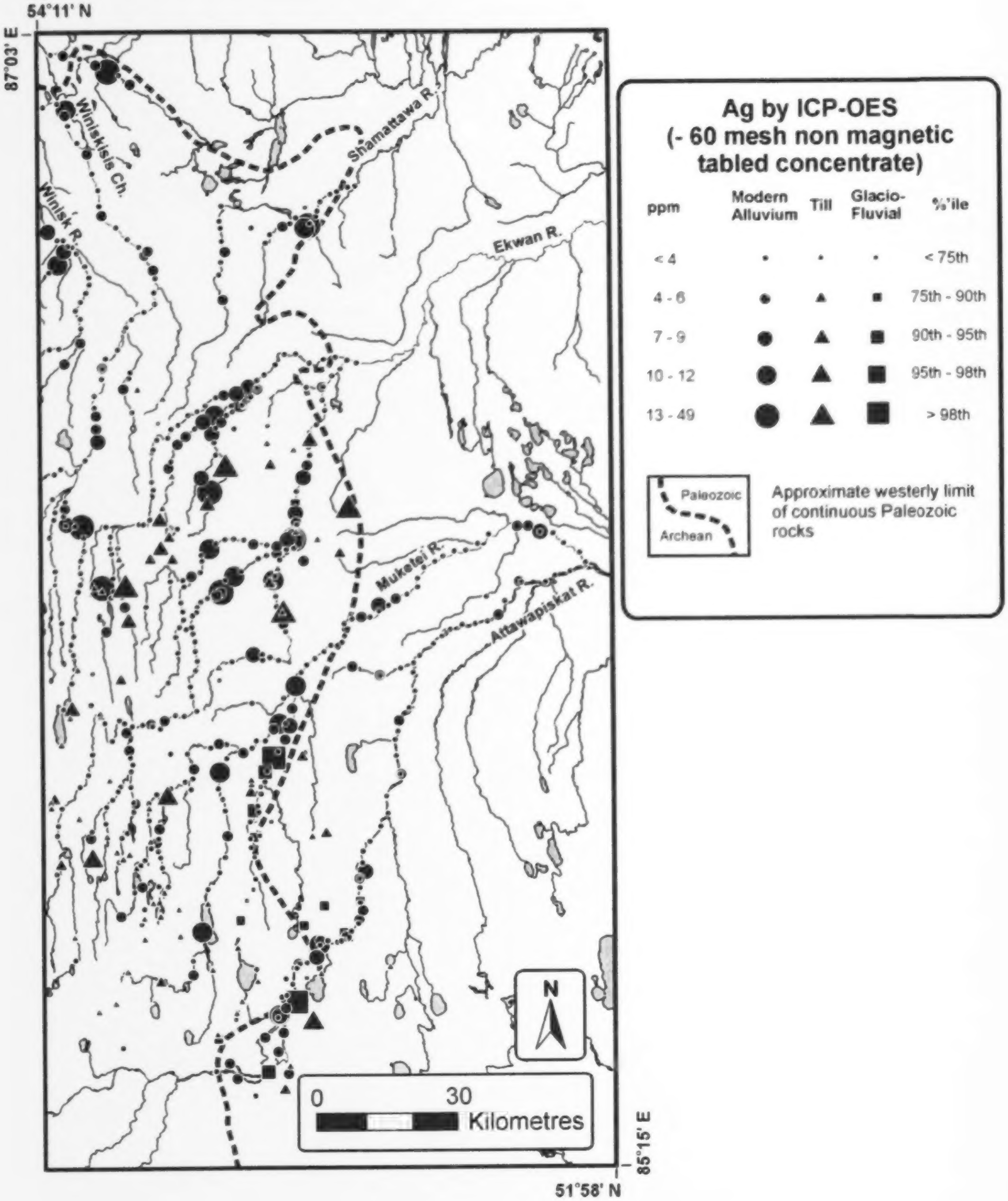

54°11' N
87°03' E
51°58' N
85°15' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Th by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 8.6
< 75th
8.6 - 11.9
75th - 90th
12.0 - 13.9
90th - 95th
14.0 - 18.9
95th - 98th
19.0 - 65.0
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

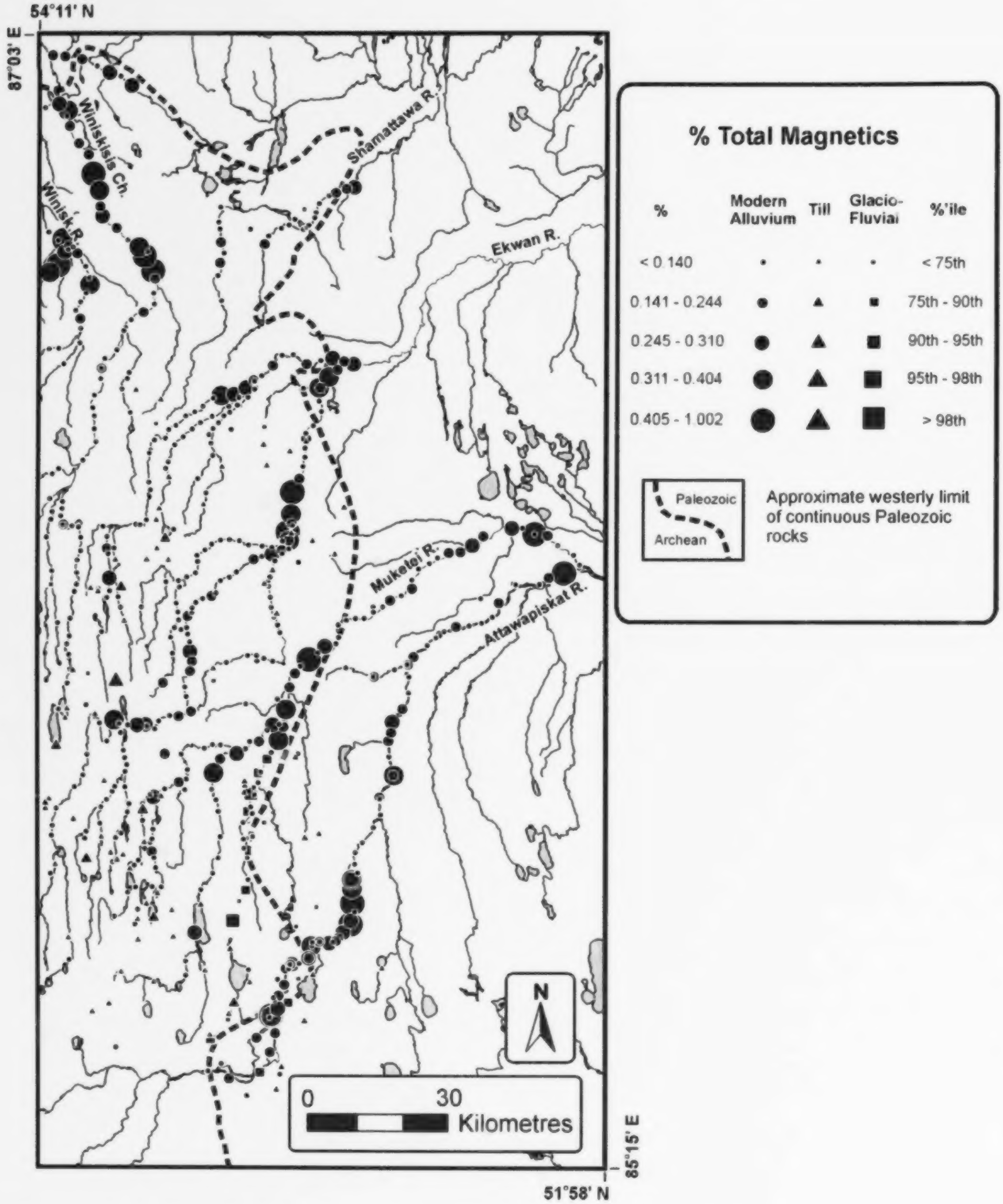

54°11' N
87°03' E
55°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
Th by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 140
< 75th
140 - 189
75th - 90th
190 - 219
90th - 95th
220 - 279
95th - 98th
280 - 440
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks


54°11' N
87°03' E
85°15' E
51°58' N
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
U by INAA
(- 80 mesh bulk sample)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 1.9
< 75th
1.9 - 2.4
75th - 90th
2.5 - 2.8
90th - 95th
2.9 - 3.4
95th - 98th
3.5 - 9.5
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks


54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
U by INAA
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 11
< 75th
11 - 14
75th - 90th
15 - 17
90th - 95th
18 - 21
95th - 98th
22 - 89
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

This page left blank intentionally


54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
Ag by ICP-OES
(- 60 mesh non magnetic tabled concentrate)
ppm
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 4
< 75th
4 - 6
75th - 90th
7 - 9
90th - 95th
10 - 12
95th - 98th
13 - 49
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks
N
0
30
Kilometres
85°15' E
51°58' N


54°11' N
87°03' E
Winiskisis Ch.
Winisk R.
Shamattawa R.
Ekwan R.
Muketei R.
Attawapiskat R.
N
0
30
Kilometres
85°15' E
51°58' N
% Total Magnetics
%
Modern Alluvium
Till
Glacio-Fluvial
%'ile
< 0.140
< 75th
0.141 - 0.244
75th - 90th
0.245 - 0.310
90th - 95th
0.311 - 0.404
95th - 98th
0.405 - 1.002
> 98th
Paleozoic
Archean
Approximate westerly limit of continuous Paleozoic rocks

Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.